

885
P15

RAILWAY AGE

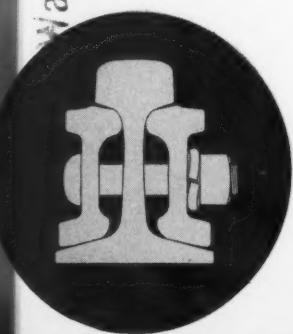
A.R.E.A. PRE-CONVENTION AND EXHIBIT-IN-PRINT NUMBER

University of Detroit MARCH 11, 1950

Library

IMPROVED RAIL SECTIONS

Wanted For Binding



Need the Best in
RAIL JOINTS



100
300

THE RAIL JOINT COMPANY, Inc.
50 CHURCH ST. NEW YORK 7, N. Y.



Bargain with a bonus

Low first cost makes today's improved chilled car wheel a real bargain. But take a look at the bonus that goes with it—fast delivery of chilled car wheels from a nearby AMCCW plant. This means that you can hold

your stock of car wheels to a sensible, economical minimum. When you look at the AMCCW plant locations below, you will see how delivery of freight car wheels over foreign lines can be reduced or even eliminated.



ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS

445 North Sacramento Boulevard, Chicago 12, Ill.
 American Car & Foundry Co. • Southern Wheel (American Brake Shoe Co.) • Griffin Wheel Co.
 Marshall Car Wheel & Foundry Co. • New York Car Wheel Co. • Pullman-Standard Car Mfg. Co.

MINER CLASS A-121-X

FRICITION DRAFT GEAR



H. MINER INC. - CHICAGO

HERE IT IS!!!!

THE 1950 MODEL
JACKSON
MULTIPLE TAMPER

Stepped-up in speed of operation . . . greatly improved in those mechanical details that assure longevity and freedom from trouble (the result of three years of careful observation of operations in the field) . . . and provided with weather protection for the operator, the Jackson Multiple Tamper's previous wide margin of superiority as the best means of putting up perfect track at the lowest cost per mile, has been greatly increased in the 1950 model.

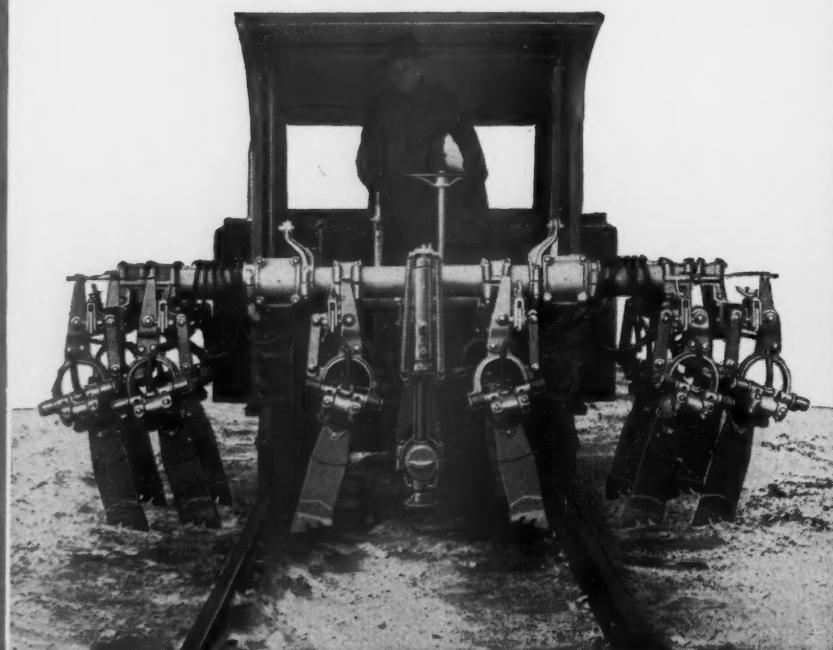
Note the more important improvements

listed at the right. Consider the fact that Jackson field engineers assist supervisory personnel, on initial installations, to perfect organization and methods that assure maximum results. Investigate, if you will, the actual performance records of the Jackson Multiple Tamper on any of the many roads on which it is being used. Then, we feel sure, you are bound to agree that nothing approaches the 1950 Jackson Multiple Tamper for producing finished track of highest quality at lowest cost.

***THE ONLY TAMPER WITH WHICH PERFECT TRACK CAN BE PUT UP**

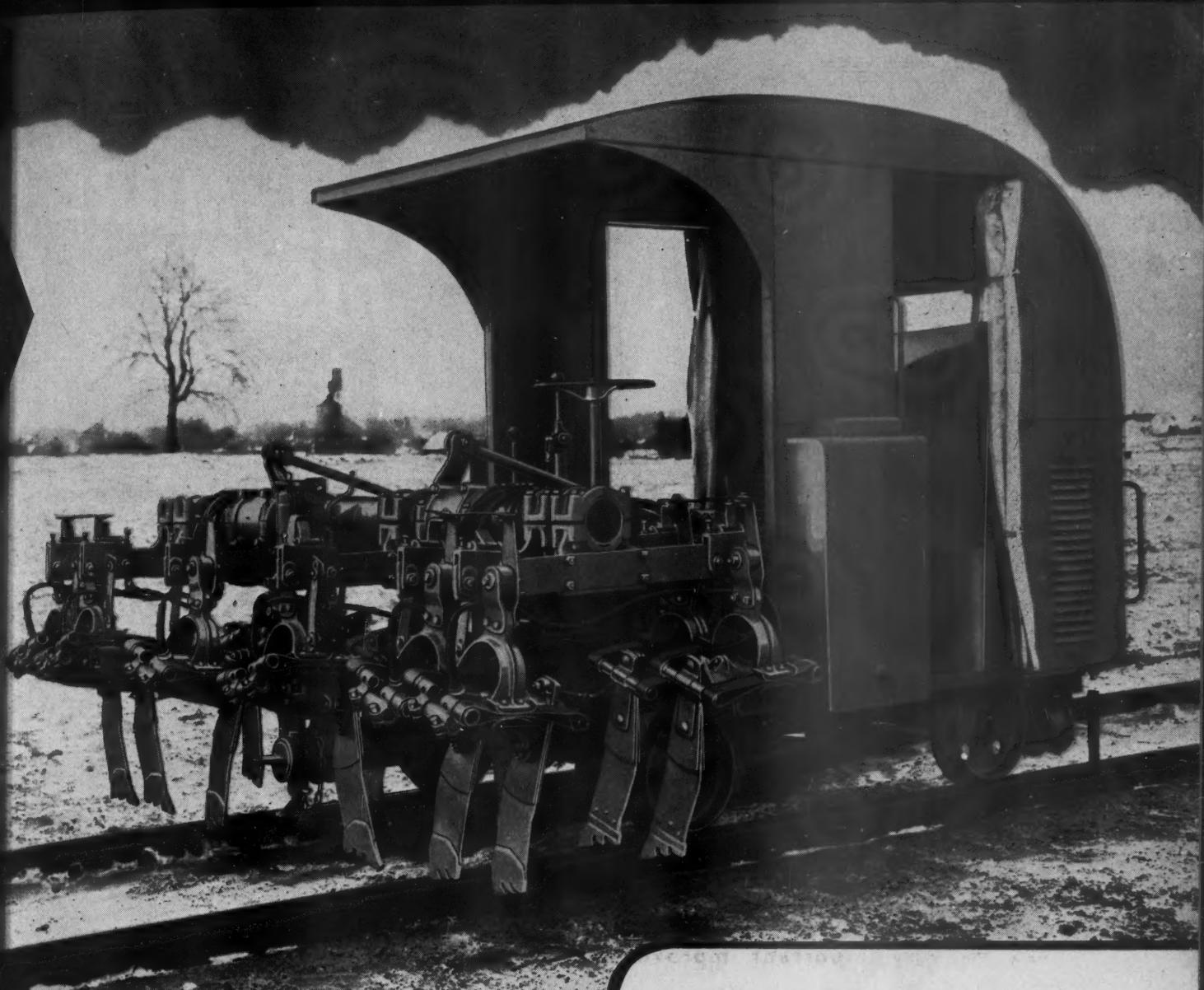
*In the vast majority of operations no spot tamping or follow-up of any kind is necessary.

Note the high degree of visibility both forward and through the rear of the cab.



Upper half of the cab may be quickly and easily removed for handling with crane - replaced in weather protection.

ELECTRIC TAMPER & EQUIPMENT COMPANY



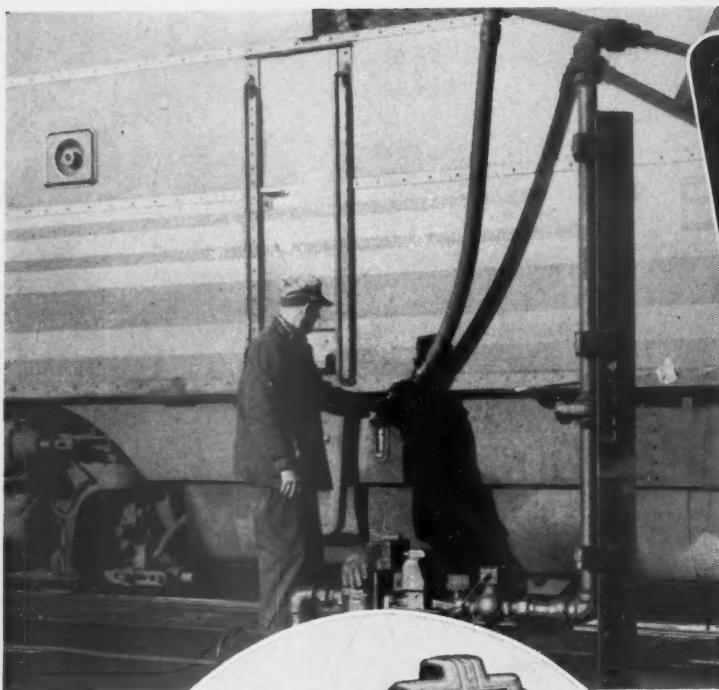
AN PUT UP IN JUST ONE OPERATION



AN DINGTON, MICHIGAN

**OUTSTANDING IMPROVEMENTS
IN THE 1950 MODEL:**

1. Larger, More Powerful Engine
2. Heavy Duty Transmission
3. Improved Hydraulic Pump of Greater Capacity
4. Externally Packed Rams
5. Improved, Positive, Quickly Adjustable Tamper Suspension
6. Demountable Cab
7. Larger Fuel Tank
8. Improved Tamper Blades and Tips
9. Greater Speed of Operation

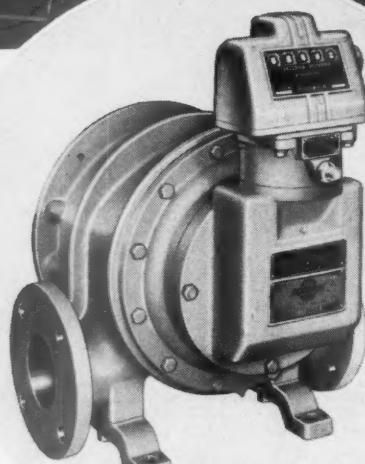


**REFUEL MORE
DIESELS**
in less time!

with

BOWSER
ESTABLISHED 1885

**DIESEL REFUELING
SYSTEMS**



THIS **NEW** BOWSER
350 GPM
ROTOROL METER
Saves Man-Hours!



Designed with Railroads in mind, the new Bowser Rotorol meter helps to crowd more Diesel refueling jobs into an hour without "crowding" operator.

NEW CATALOG

There's a new catalog on Bowser Railroad Equipment just off the press! Write for your **FREE** copy today.

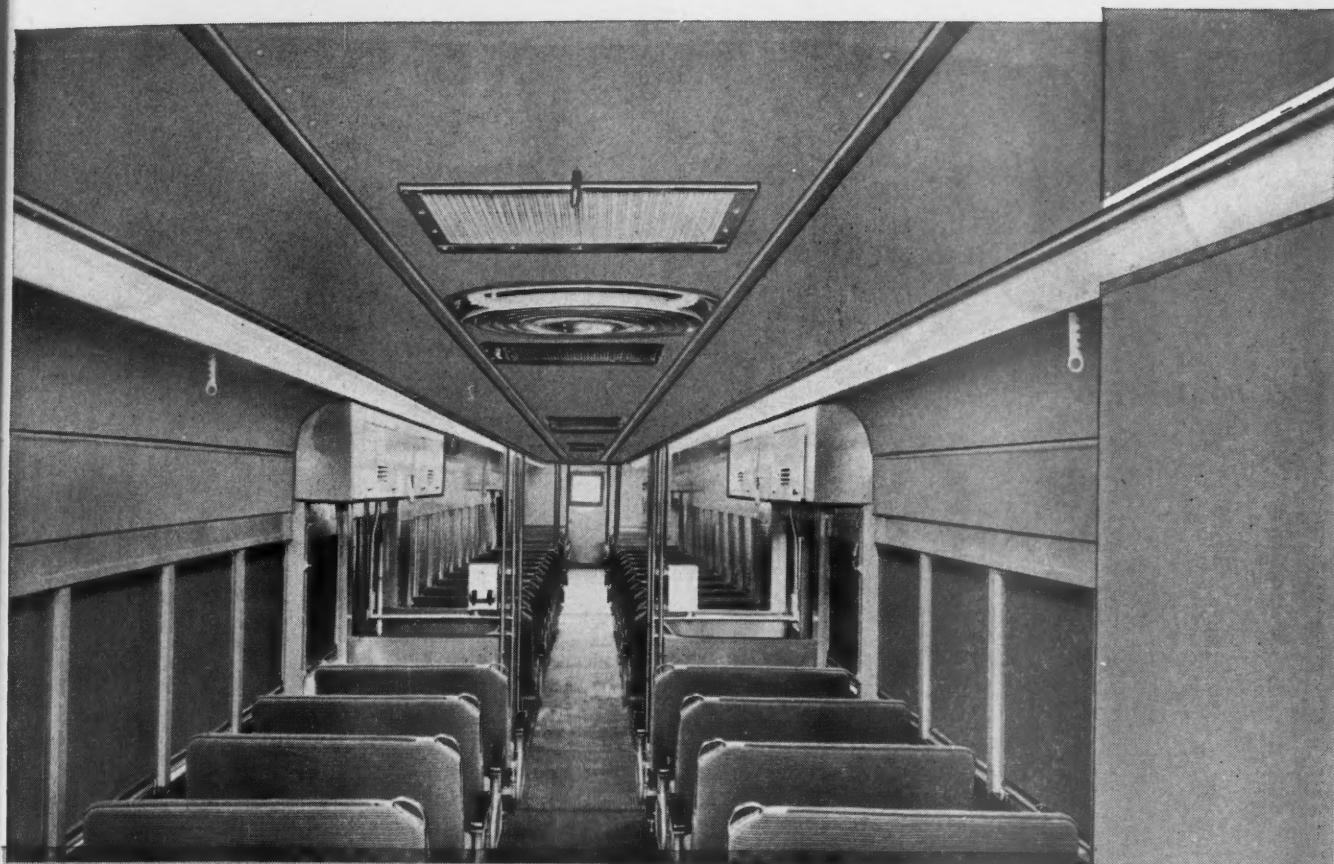


BOWSER, INC.

1321 CREIGHTON AVENUE, FORT WAYNE 2, INDIANA

Railroad Representatives in Principal Cities

LIQUID CONTROL SPECIALISTS SINCE 1885



Photos Courtesy Pullman-Standard Car Mfg. Co.

LUMINATOR-FLUORESCENT LIGHTING in NEW SUBURBAN COACHES

Luminator-designed fluorescent lighting was selected to light Rock Island's new suburban cars built by Pullman Standard. Engineered to achieve maximum lighting efficiency, combined with attractive interiors, Luminator Fluorescent structures provide shadowless, glareless, light for reading. Enameled portion of lenses spread a soft diffused light for general illumination. Luminator engineered fixtures are dust proof, provide long life and less maintenance.



LUMINATOR inc.
LIGHTING ENGINEERS • DESIGNERS • MANUFACTURERS

120 NORTH PEORIA ST., CHICAGO 80, ILLINOIS
IN CANADA: RAILWAY AND POWER ENGINEERING CORP

MORE BARCOS WILL HELP SOLVE THE 40-HOUR WEEK

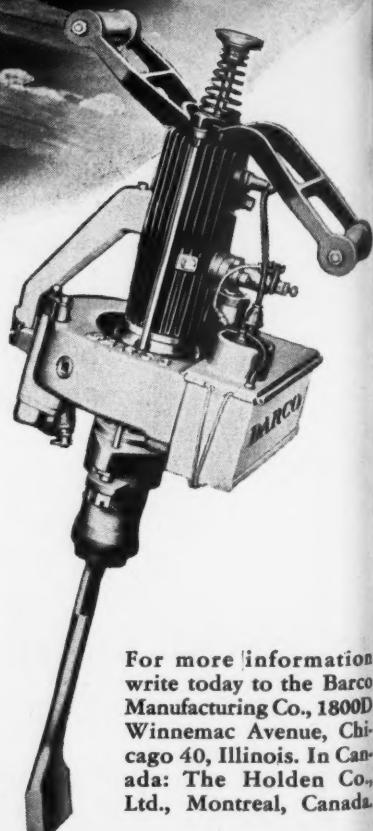


By maintaining track with less large gang work • BARCO has more power and will tamp more ties better • Will tamp cemented ballast • Will not tie up the tracks • May be used for other work when not tamping • No expensive equipment to be tied up for months each year

BARCO

UNIT TYTAMPERS

FREE ENTERPRISE—THE CORNERSTONE OF AMERICAN PROSPERITY



For more information write today to the Barco Manufacturing Co., 1800D Winnemac Avenue, Chicago 40, Illinois. In Canada: The Holden Co., Ltd., Montreal, Canada.



Two "Cat" D17000s power this 44-ton locomotive for the Mississippi Export Railroad. Whereas the old steam engines they replaced had to have a major overhaul job every four years at a cost of \$5000—the "Caterpillar" Diesels have needed overhauling only once in nine years, at a cost of \$1500.

THIS LOCOMOTIVE BANKS MONEY

POWERED by two D17000 "Cat" Railroad Diesels, this Mississippi Export Railroad locomotive saves \$50 per day over the steam power it replaced—and the engines cost less for repairs, too.

"I just don't think 'Caterpillar' Engines can be beat for this type of railroading and tonnage!" says engineer Albert Boldt, who ought to know. "And our 'Caterpillar' powered locomotive hauls as much proportionally to tonnage rate as the steam train did, averaging 50 cars and up to 3 hauls a day."

These "Cat" Diesels once bulled this 44-tonner through a 90-mile hurricane with no work interruption. Another time they ran sweetly 24 hours a day for two months, resting only to change crews and fuel up. "Caterpillar" Railroad Diesels ranging up to 500 hp. are available for hauling, switching, standby work, and rail motor car service. The major manufacturers are able to supply "Caterpillar" power in the locomotives they build. Ask your "Caterpillar" dealer today to show you how "Cat" Railroad Diesels can cut your railroading costs tomorrow!

CATERPILLAR TRACTOR CO., PEORIA, ILLINOIS

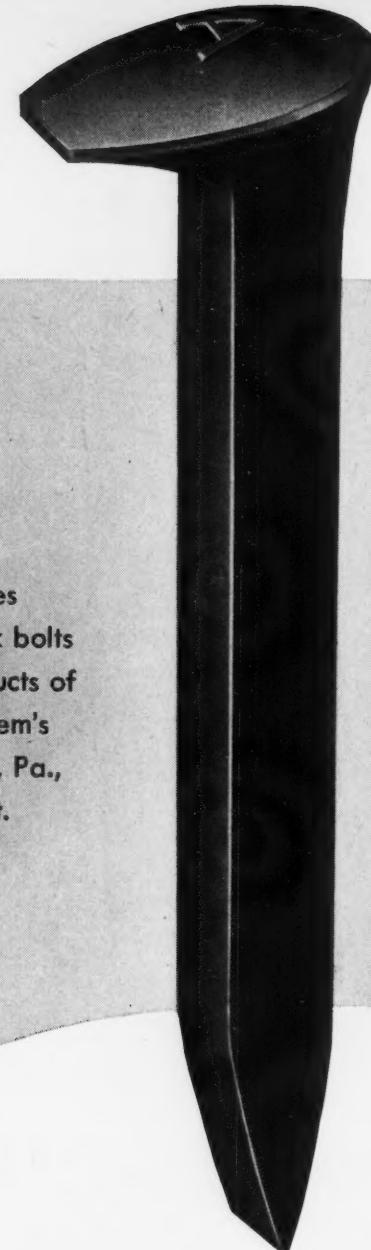
LOOK UNDER THE HIDE

Subject to thrust and shock, crankshafts must be rugged. "Caterpillar" crankshafts are superior quality steel forgings, accurately machined and balanced. Main bearings are on each side of crankpin journals. Large-radius fillets reduce stress concentrations while end thrust is absorbed on polished thrust surfaces. "Hi-Electro" hardened for maximum service life and Superfinished to within five-millionths of an inch of true surface smoothness, these crankshafts are tops in design and craftsmanship. Look under the hide for quality!



CATERPILLAR
REG. U. S. PAT. OFF.
RAILROAD
DIESELS

Spikes



Spikes
and track bolts
are products of
Bethlehem's
Lebanon, Pa.,
plant.



Track Bolts

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

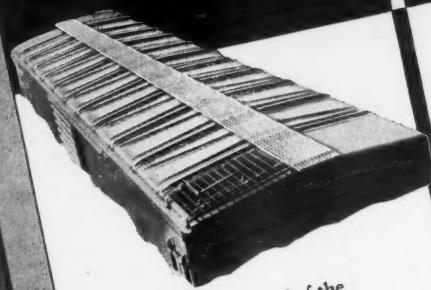
On the Pacific Coast Bethlehem products are sold by
Bethlehem Pacific Coast Steel Corporation
Export Distributor: Bethlehem Steel Export Corporation



Bethlehem supplies every type of Railroad Fastening

No other freight or gondola car end
of the same weight is as strong as
Standard's Improved Dreadnaught End.

Here's why



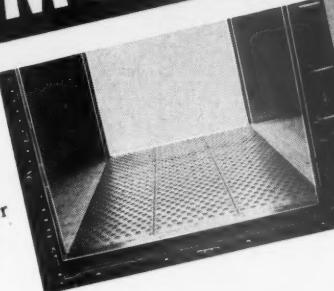
No other freight car roof of the
same weight is as strong as
Standard's Diagonal Panel Roof.



No other development is available
to do the job of Standard's Centering
Device with Coupler Height Adjustment.

"Standard"
sells MORE

There is no single
freight car specialty
more valuable
for eliminating repair
shopping time than
Standard's Metal
Floor Protector.



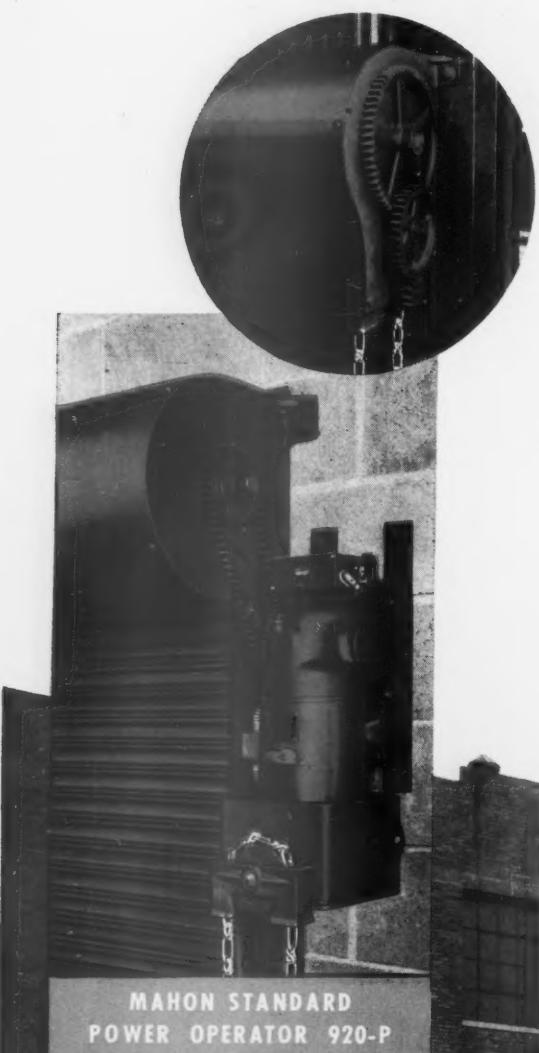
**STANDARD
RAILWAY EQUIPMENT
MANUFACTURING
COMPANY**

310 SOUTH MICHIGAN AVENUE • CHICAGO 4
247 PARK AVENUE • NEW YORK 17

The World's Largest Fabricator of Railway Car Specialties

The products themselves answer
the question in the headline. Read the
captions, and the reason is obvious!
It's true of all "Standard" products,
not just the four pictured.

Rolling Steel DOORS



Manually, Mechanically, or Power Operated

Modern, permanent industrial or commercial buildings today merit the permanence of good, all metal rolling steel doors. No other type of door offers as many desirable features as the vertically acting, quick opening, quick closing, power operated rolling steel door. Open or closed, it occupies no usable space inside or outside the opening . . . its roll-up action requires a minimum of space, provides 100% clear opening, and eliminates door damage . . . its all metal construction assures permanence and a lifetime of trouble-free service — and, most important, it provides maximum protection against intrusion and fire. If you select Mahon Rolling Steel Doors, regardless of the type of opening, you can rest assured that you will get the latest developments in doors of this type . . . more compact and more practical operating devices, curtain slats of Aluminum, Stainless Steel, or Galvanized Steel which is scientifically cleaned, rust proofed, and coated with high temperature oven-baked rust inhibiting enamel prior to roll-forming. These, and many other desirable features that characterize Mahon Rolling Steel Doors, are worthy of your consideration. See Sweet's Files for complete information, specifications and details, or write for Catalog G-49.

THE R. C. MAHON COMPANY

Detroit 11, Michigan • Western Sales Division, Chicago 4, Illinois

Representatives in all Principal Cities

Manufacturers of Rolling Steel Doors, Grilles, and Automatic Closing Underwriters' Labeled Rolling Steel Doors and Fire Shutters; Insulated Metal Walls, Steel Deck for Roofs, Partitions, Acoustical Ceilings, and Permanent Concrete Floor Forms.



ROLLING STEEL DOORS, SHUTTERS AND GRILLES TO MEET EVERY REQUIREMENT

Three Mahon Power Operated Rolling Steel Doors recently installed in a new addition to a large Midwest Automobile plant. These openings are 37'-0" x 14'-9", 33'-0" x 14'-9" and 11'-0" x 15'-1". A total of seventy-six Mahon Rolling Steel Doors are now installed in this one plant.

MAHON

RAILWAY M

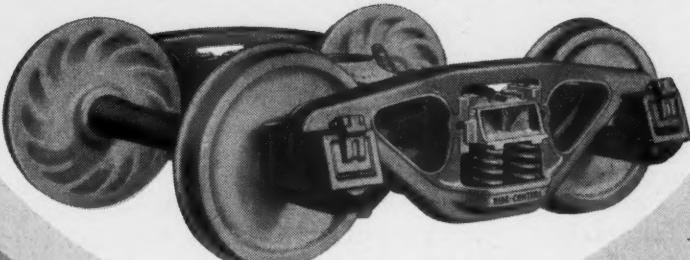
**You
HAVE THE
FACTS**

**For welcome, long-term lower costs,
you can't beat Ride-Control Trucks!**

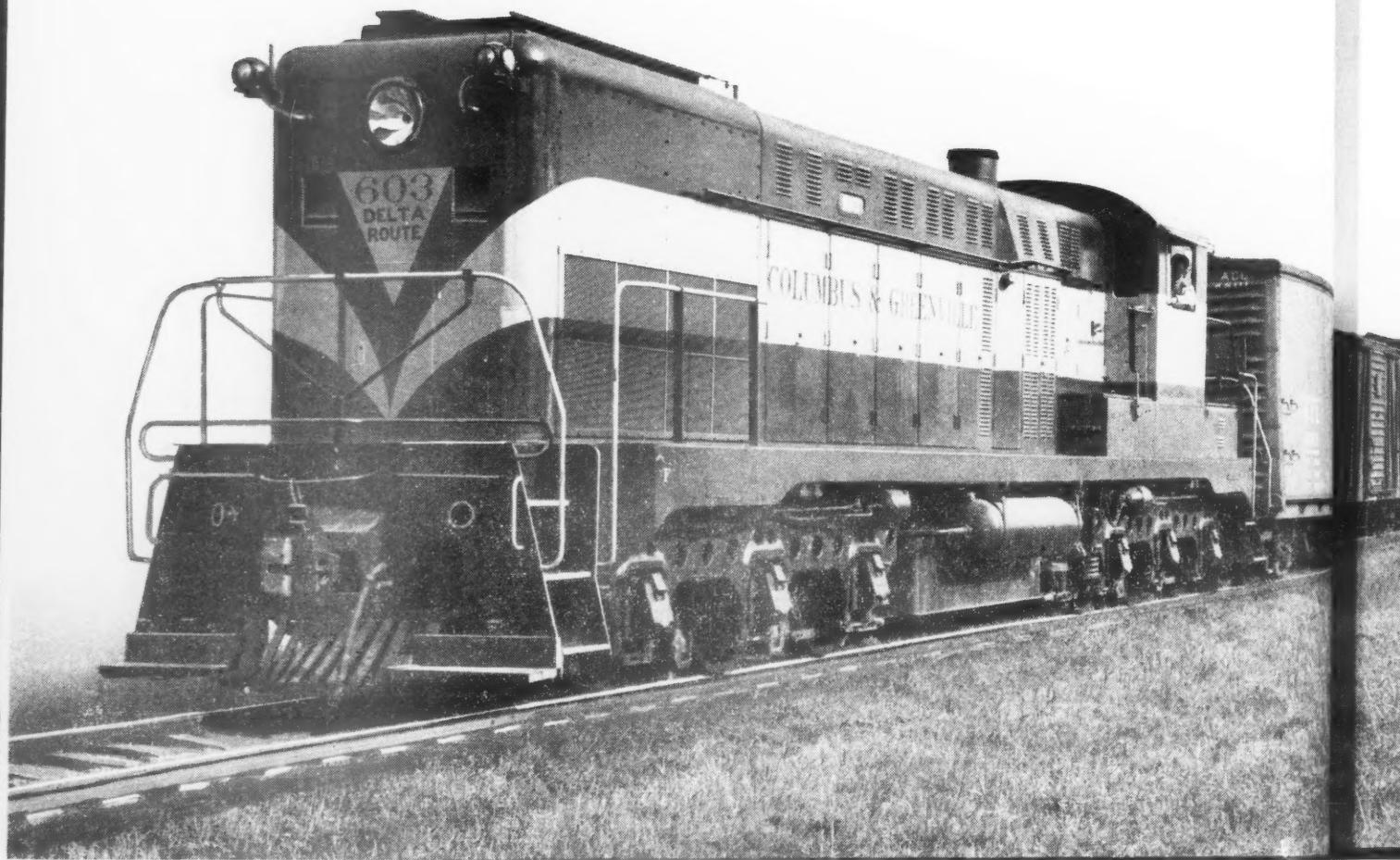
**Check your own records and see
for yourself how these trucks
save you time—save you money.**

A·S·F Ride-Control® TRUCK

LONG SPRING TRAVEL • CONSTANT FRICTION CONTROL



**AMERICAN
STEEL
FOUNDRIES**



LAST two years ago, the Columbus & Greenville Railway Company completed the dieselization of its motive power. Five Baldwin-Westinghouse 1500-hp. diesel-electric road switching locomotives and two Whitcomb 566-hp. diesel switchers replaced 23 steam locomotives formerly used. The records prove that this investment in diesel locomotives is paying off in the form of reduced operating expenses.

Here are a few examples of how the diesel power is saving money:

Freight volume that required four steam trains with an average elapsed time of 15 hours between terminals at Columbus and Greenville, can now be handled by three diesel-powered trains with an average time of 13 hours.

Much double-heading required with steam power has been eliminated under diesel operation.

Switching and transfer moves can be accomplished in about one-third less time than formerly.

Diesels get the trains up to running speeds after stops and slow-downs in about half the time required with steam locomotives.

The Baldwin-Westinghouse diesels handle about 33½ per cent more tonnage on ruling grades than was possible with steam.

Roundhouse expense has been reduced about 50 per cent.

Perhaps similar savings can be made in some of your operations. May we discuss your problems with you?

complete

modernized

effectively

savings

on the

“Delta Route”

Baldwin-Westinghouse, 1500-hp., diesel-electric
road switching locomotive.

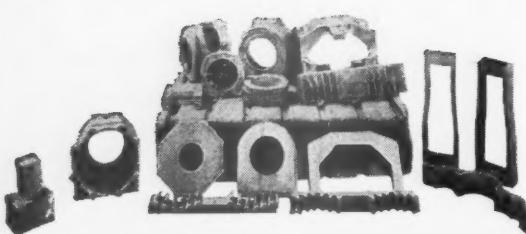


BAUDWELL & CO. LOCOMOTIVES

NOW

A GAS SHAPE CUTTING MACHINE

THAT IS: **1. low-priced**
2. portable
3. accurate



Costs Come Down Under The Airco Plan



AIR REDUCTION
Offices in Principal Cities

Headquarters for Oxygen, Acetylene and Other Gases...Calcium Carbide...Gas Cutting Machines...Gas Welding Apparatus and Supplies...Arc Welders, Electrodes and Accessories

That's a statement that is 100% true! Ask the Milwaukee Road . . . they have found this new machine—the AIRCO No. 3 MONOGRAPH—excellent for shape cutting around the shop.

To date, the Milwaukee has cut more than 16,000 gondola drop-floor hinges—stack cutting them from mild steel plate, as shown above. This one operation saved more than the price of the machine. In addition, the road cut hundreds of other car and locomotive parts—body center plate blanks, engine truck roller racks, spring hangers, pipe clamps and many others.

The NEW Airco No. 3 Monograph will handle practically any cutting job—straight line, circle, or bevel, in addition to angles, curves and other ordinary shapes. It can be used stationary or portable, as the occasion demands.

This NEW machine, lowest priced of its type on the market (only \$695, including a manual tracing device, torch, tip, tubular rail, hose and carrying case), will cut steel up to 8 inches thick. Its cutting area is 32 inches by 56 inches, and with the addition of sections of 6-foot, 8-inch tubular rail, the length of the cutting area can be extended as desired.

SPECIAL TRIAL OFFER
(Good in Continental U.S.A. Only)

If you would like to try this machine for two weeks in your own shop on your own work, just drop a letter to your nearest Airco office, and they will advise you how this can be arranged . . . or, if you would like a descriptive folder (ADC-660), they will be glad to send you one.



Free... the facts you

should know about Punched-Card Accounting

and why it can save you money!

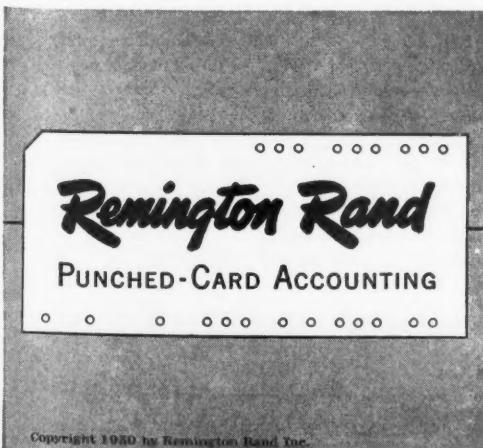
Your name and address on the coupon below will bring our new folder, *Atomic-Age Accounting*, to your desk . . . at once!

It's a quick, picture-story explanation of the world's most modern accounting method. The accounting and statistical method that is helping businesses large and small to *cut record-keeping and report-preparation costs*. And, even more important, to *increase profits* by giving management

the finest administrative record procedures they've ever had!

In short, this informative folder shows why so many management men rely on Remington Rand punched cards for the facts they need to *plan, coordinate, control and protect* their business.

If you'd like this simplified story of how punched-card accounting works . . . or if a *proven way to cut costs* interests you, send for *Atomic-Age Accounting* now. Simply send us the handy coupon.



MAIL TO: Accounting-Tabulating — Room 109 — Management Controls Division, Remington Rand Inc., 315 Fourth Avenue, New York 10, New York

Yes, send me *Atomic-Age Accounting*. No obligation, of course.

Name.....

Title.....

Department.....

Street.....

City..... Zone..... State.....

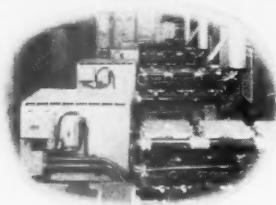
for dependable
POWER...
SERVICE*

SPECIFY

CUMMINS

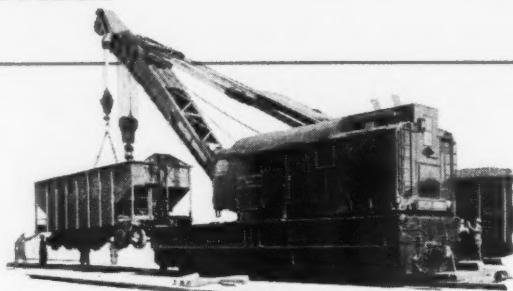


* Parts and service available from more than
200 strategically located Cummins Dealers



CHICAGO, BURLINGTON AND QUINCY

The nation's first Diesel-powered streamlined train, the Burlington Zephyr, employed four Model HGA-600 Cummins Diesels to drive generator sets for air-conditioning, train lighting and auxiliary electric power. C. B. and Q. has continued to specify performance-proved Cummins Diesels for this type of service.



NORFOLK AND WESTERN

The largest crane in the world, this Industrial Brownhoist unit on the Norfolk and Western is powered with two 150 hp (max.) Cummins Diesels. With Cummins Power, this unit can lift and move a 250-ton load at a distance of more than 17 feet from the center of the car.



BALTIMORE AND OHIO

This Baltimore and Ohio two-car motor train was re-powered with a Model LI-600 Cummins Diesel with a minimum of alteration. Cummins Diesels cut operating costs to one-quarter or as much as one-half of those experienced with gasoline engines.

50 to 550 hp

A wide range of models and a wide range of horsepower . . . 50 to 550 hp. A choice of medium speed or highspeed Diesels—naturally aspirated or supercharged models—for direct drive or Diesel-electric generating sets.

Standardization on Cummins Dependable Diesels for your maintenance-of-way equipment, motor cars and trains, auxiliary power, and industrial type locomotives or switchers assures you more work for less low-cost fuel—with less maintenance than any other Diesel.

HIGHSPEED DIESEL ENGINES (50-550 HP) FOR: ON-HIGHWAY TRUCKS • OFF-HIGHWAY TRUCKS • BUSES • TRACTORS • EARTH-MOVERS • SHOVELS • CRANES • INDUSTRIAL LOCOMOTIVES • AIR COMPRESSORS • LOGGING YARDERS AND LOADERS • DRILLING RIGS • CENTRIFUGAL PUMPS • GENERATOR SETS AND POWER UNITS • WORK BOATS AND PLEASURE CRAFT.

CUMMINS ENGINE COMPANY, INC. • COLUMBUS, INDIANA
EXPORT: CUMMINS DIESEL EXPORT CORPORATION • COLUMBUS, INDIANA, U. S. A. • CABLE: CUMDIEX

Little things that Count: **DIXIE CUPS**

... favorite of travelers



Aboard the Milwaukee Road's crack "Olympian Hiawatha", passengers are afforded every comfort and modern convenience. High on the list is the refreshing convenience of a cool drink in a clean Dixie Cup. Known for quality . . . recognized for cleanliness . . . Dixies are the most popular of paper cups. And seeing the familiar blue design Dixie Cup is like meeting an old friend enroute.

The Milwaukee Road, and other leading railroads, have found that it pays to offer their passengers the best of everything . . . even the little things like Dixie Cups.

Dixie Cup Dispensers, from the handsome, recessed model to the handy space-saving model for roomettes and compartments, are carefully designed to add the final touch to passenger appointments. And *only* Dixie Dispensers offer interchangeable cup adaptors for using *both* flat-bottom Dixies or cone-shaped Vortex Cups.



**SPECIAL IMPRINTING OF CUPS
WITH YOUR INSIGNIA, SLOGAN,
NAME OR OTHER MESSAGE TO
YOUR ORDER.**

**WRITE TO RAILROAD DEPART-
MENT, DIXIE CUP COMPANY,
EASTON, PENNSYLVANIA**



"Dixie" and "Vortex" are registered trade marks of the Dixie Cup Company



STREAMLINER

. . . trim, smart, quickly mounts anywhere. Unbreakable plastic window shows when it's time to refill. Holds flat-bottom Dixies or cone-shaped Vortex Cups . . . either large or small sizes.



SPACE SAVER

. . . perfect for roomettes, compartments, wherever space is limited.

DIXIE RECESSED DISPENSER

. . . beautiful satin-chrome finish. Fits flush with bulkhead. Takes EITHER flat-bottom Dixies or cone-shaped Vortex Cups. An exclusive dual advantage provided *only* by Dixie's interchangeable cup adaptors.

STANDARD IN RAILROAD SERVICE FOR OVER 30 YEARS

Western Pacific Buys Budd RDC

The new car is designated RDC-2. It differs from RDC-1 only in that a 17-foot section of the interior is devoted to a baggage compartment. Otherwise they are identical.

This service will replace two steam trains on the 834 mile run between Stockton and Salt Lake City. Schedules call for operating 39 hours 35 minutes in forty-eight hours.

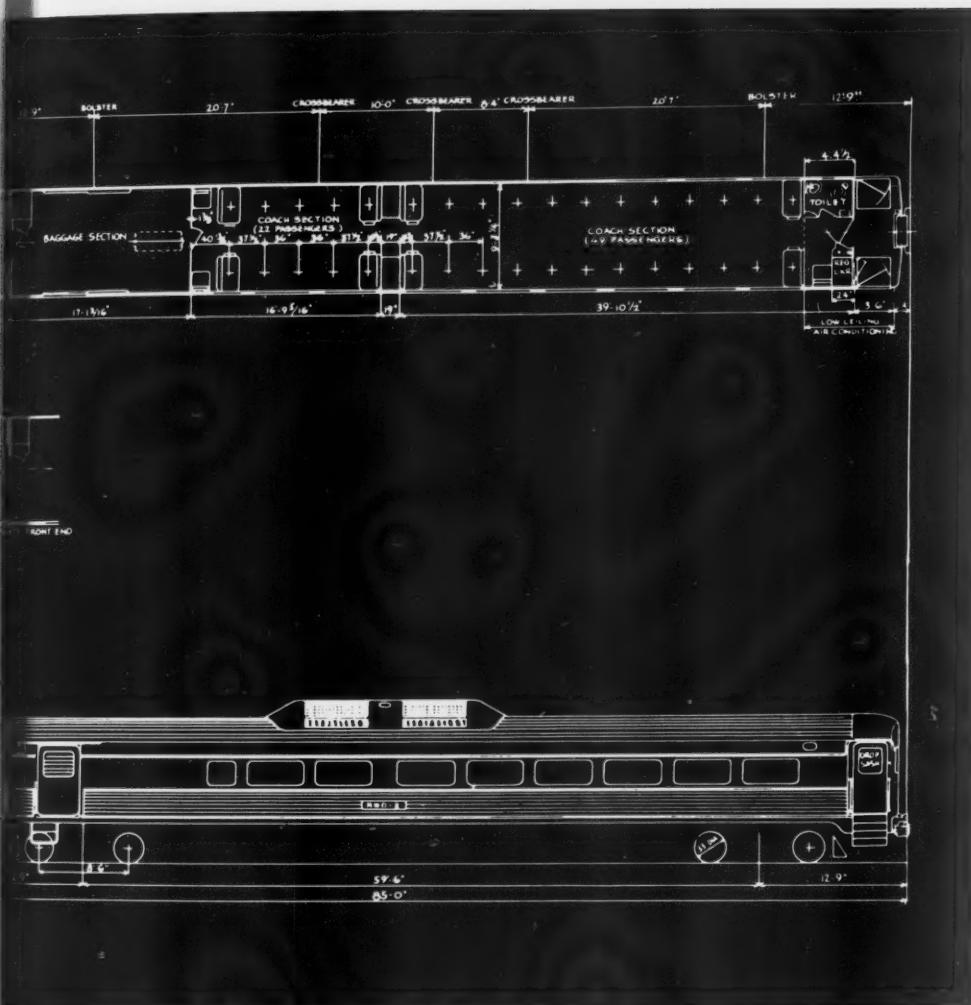
Between the two cities there are 25 scheduled stops and 56 flag stops. It is eloquent of RDC's ability to get going and to stop that the car can meet the 43 miles-per-hour average the schedule calls for, and still make all the flag stops if required to do so.

The terrain ranges from river valleys to mountains to desert. Temperatures, through the year, from below zero to well over 100°.

Western Pacific has given RDC a rugged assignment . . . but one that rugged RDC is fully qualified to meet. The Budd Company, Philadelphia 32.

Budd

by
RDC



Plan and elevation of RDC-2, showing 17' 1" baggage section, and coach sections seating 71 passengers. Complete engineman's controls are located at both ends.

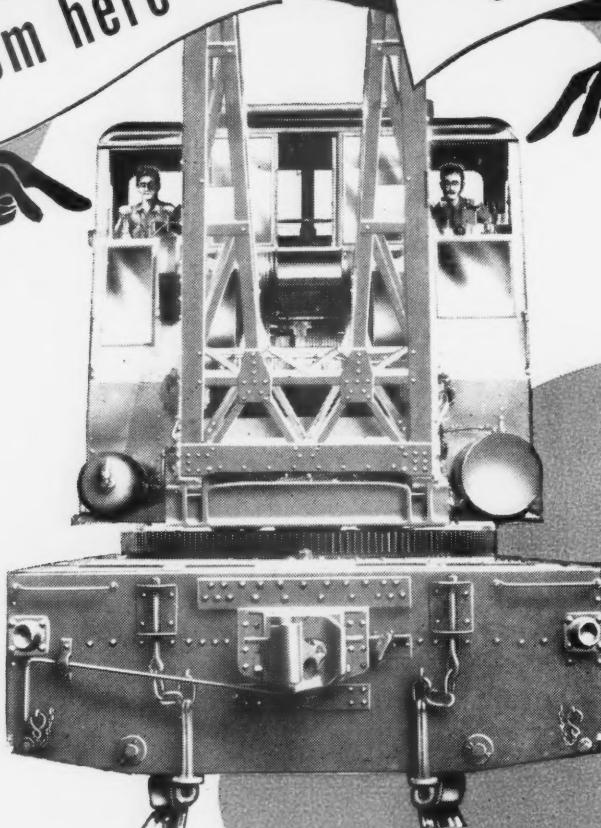


Budd rail diesel car RDC-1, prototype of RDC-2 ordered by Western Pacific. The price of RDC-2, at Philadelphia, is \$127,800.

new INDUSTRIAL BROWNHOIST DUAL CONTROL permits operator to work...

from here

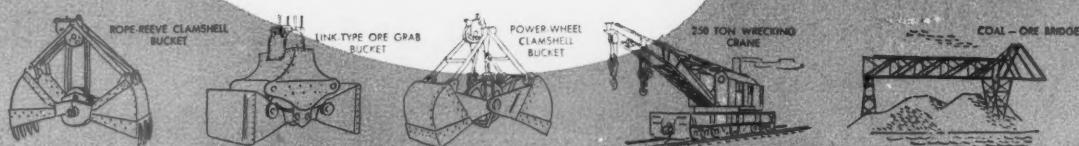
or here



**dual control for better vision, maximum efficiency
and greater safety in maintenance of way**

Never before has any crane afforded the "visibility-unlimited" of the new Industrial Brownhoist Dual Control Locomotive Crane. It is ingeniously built with a high "monitor" type cab that extends the entire width of the crane. Inside the cab, on each side, is located a complete set of interlocking controls . . . easily reached by the operator without ever leaving the cab. This arrangement allows perfect vision on either side of the track and to the rear when traveling or working. Get all the facts about how this new Industrial Brownhoist Dual Control Locomotive Crane can save money, save time, increase safety . . . write us today.

BROWNHOIST BUILDS BETTER CRANES



INDUSTRIAL BROWNHOIST CORPORATION • BAY CITY, MICHIGAN

DISTRICT OFFICES: New York, Philadelphia, Cleveland, Chicago. AGENCIES: Detroit, Birmingham, Houston, Los Angeles, Portland, San Francisco, Seattle, Spokane, Canadian Brownhoist Ltd., Montreal, Quebec.

REMODELED COACHES

are getting this Modern "Touch", too



Featured attractions and proved performers on new passenger equipment, NP *Automatic* End Door Operators are finding widespread favor in coach remodeling programs. For railroad officials know that these popular passenger-pleasers add a modern "touch" that is constantly used and appreciated.

And equally important, NP *Automatic* End Door Operators are efficiently and compactly designed — require little space — operate either swinging or sliding end doors. Rugged, durable,

they are simple to service . . . easy to maintain.

When planning coach modernization, include the advantages provided by this modern method of end-door control. Product of National Pneumatic — for nearly fifty years the outstanding leader in door control equipment — NP *Automatic* End Door Operators are safe, sure, and simple to use — and they'll make a proved hit with your passengers.

For full information on this product of NP Engineering, write for Publication No. 1063.

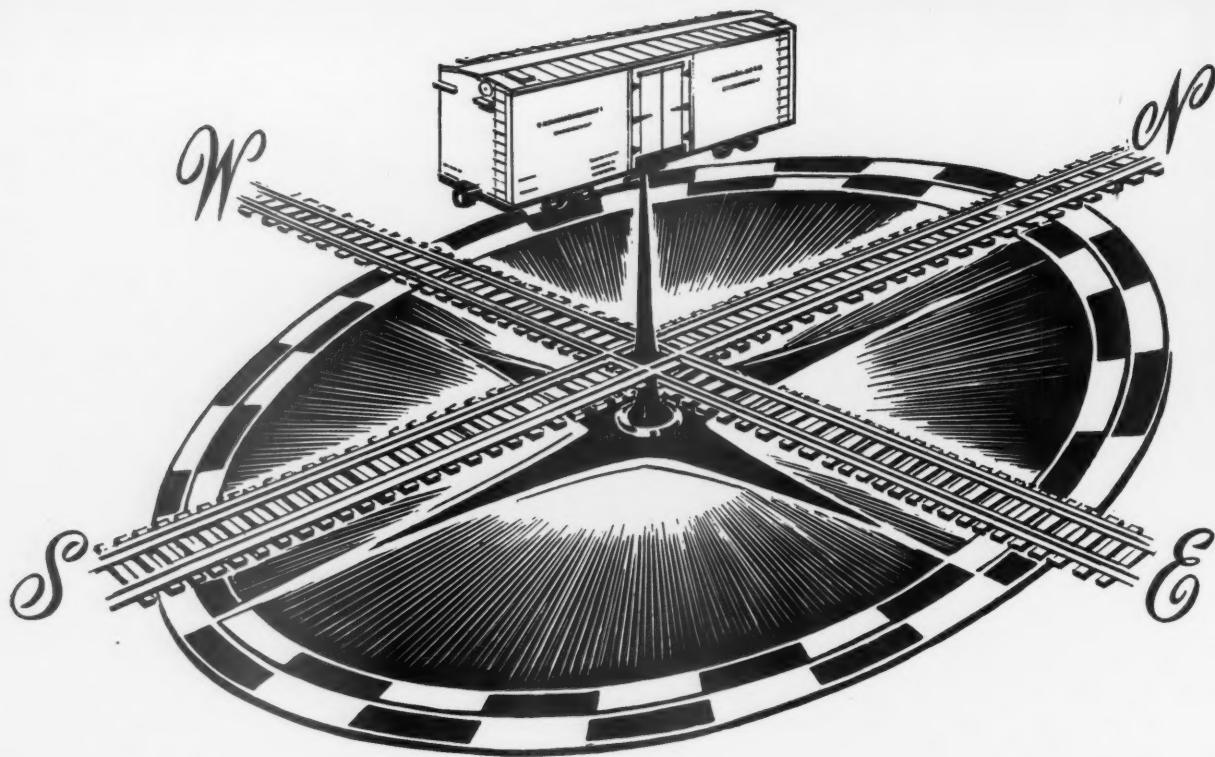
NATIONAL PNEUMATIC CO., INC.

8146

GRAYBAR BLDG., NEW YORK • 125 AMORY STREET, BOSTON 19, MASS. • McCORMICK BLDG., CHICAGO

Represented in Canada by Railway & Power Engineering Corp., Ltd., Toronto

WORLD'S LARGEST MANUFACTURER OF DOOR CONTROL AND SAFETY EQUIPMENT



Efficient under all conditions!

A refrigerator car insulated with STREAMLITE HAIRINSUL is efficient — this is true no matter at which point of the compass it may be located — in frigid mountains or on torrid plains...on long hauls or yard "humps".

Leading refrigerator car builders have been specifying all-hair insulation for nearly half a century — and they find today that STREAMLITE HAIRINSUL, with its 40% less weight, is the most efficient and economical.

Highlights of the major advantages gained by using STREAMLITE HAIRINSUL are given below — write for complete data.



LOW CONDUCTIVITY. Thoroughly washed and sterilized, all-hair heat barrier. Rated conductivity—.25 btu per square foot, per hour, per degree F., per inch thick.

LIGHT WEIGHT. Advanced processing methods reduce weight of STREAMLITE HAIRINSUL by 40%.

PERMANENT. Does not disintegrate when wet, resists absorption. Will not shake down, is fire-resistant and odorless.

EASY TO INSTALL. Blankets may be applied to car wall in one piece, from sill to plate and from one

side door to the other. Self-supporting in wall sections between fasteners.

COMPLETE RANGE. STREAMLITE HAIRINSUL is available $\frac{1}{2}$ " to 4" thick, up to 127" wide. Stitched on 5" or 10" centers between two layers of reinforced asphalt laminated paper. Other weights and facings are available.

HIGH SALVAGE VALUE. The all-hair content does not deteriorate with age; therefore has high salvage value. No other type of insulation offers a comparable saving.



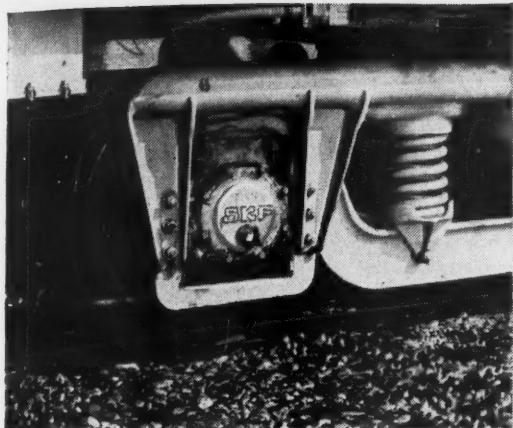
Streamlite HAIRINSUL

AMERICAN HAIR & FELT CO.

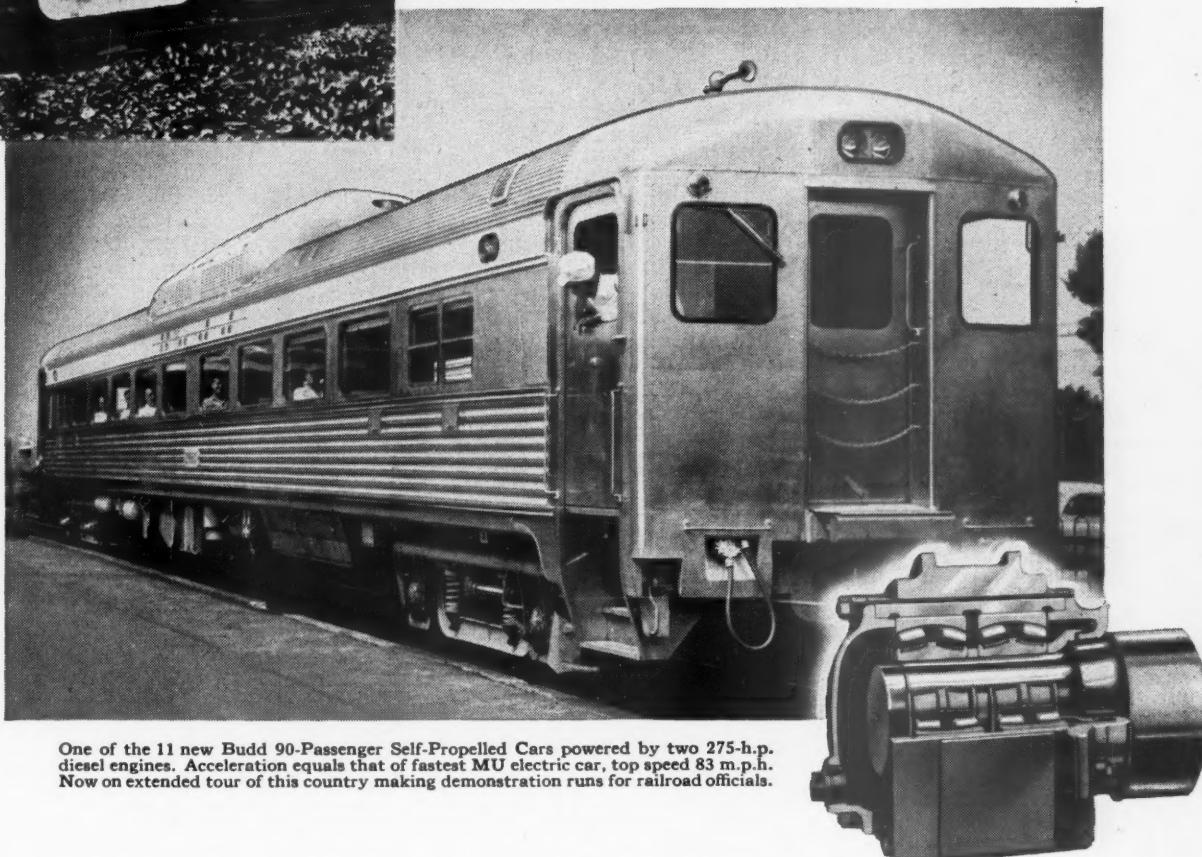
Dept. H503

Merchandise Mart

Chicago 54, Ill.



BUDD PIONEERS AGAIN



One of the 11 new Budd 90-Passenger Self-Propelled Cars powered by two 275-h.p. diesel engines. Acceleration equals that of fastest MU electric car, top speed 83 m.p.h. Now on extended tour of this country making demonstration runs for railroad officials.

... offers railroads revolutionary, self-propelled diesel car

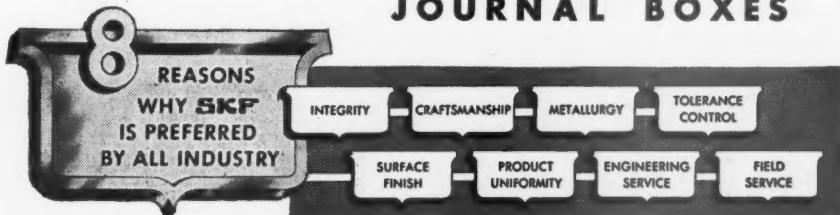
From the drafting boards of the Budd Co. comes this sleek, stainless steel, Self-Propelled Passenger Car . . . RDC-1 . . . developed for supplementing main or branch line commuter and interurban service. Combining the torque converter principle as used in automobiles with a compact diesel engine. . . . the RDC-1 provides fast acceleration with exceptionally smooth and economical operation.

To help maintain this top performance . . . at all times . . . **SKF** Spherical Roller Journal Bearings were selected because of their inherent ability to withstand wear . . . radial, thrust and combined loads and misalignment. Added to this are **SKF**'s uniform high quality . . . and rigidly controlled tolerances . . . all mighty important reasons why **SKF** will always be able to supply the right bearing for the right job. **SKF Industries, Inc., Philadelphia 32, Pa.**

7045

SKF

JOURNAL BOXES



Pioneers of the Deep Groove Ball Bearing—Spherical Roller Bearing—Self-Aligning Ball Bearing

They ride along in Safety...

ON **CF&I** RAILS

Yes, they ride in safety on CF&I rails...quality rails and accessories... made with a know-how gained from 67 years' experience in developing processes and controls which assure a **quality** product.



These CF&I rails must fulfill all the requirements of the AREA and ASTM specifications. Here these rails must satisfy the critical eyes of the customers' inspectors.

These experts are checking for surface and/or other external defects—to be sure that each rail fully meets both the requirements specified and quality of product exacted by the customer.

Here, as in every phase of manufacturing, care is being taken to see that people and products will ride along in safety on CF&I rails.

OTHER CF&I PRODUCTS: Tie Plates, Bolts, Joints, Spikes, Clinton Welded Wire Fabric.
Wickwire Rope, Realock Fence, Woven Wire Fence, Spark Arrester Cloth.

The Colorado Fuel and Iron Corporation

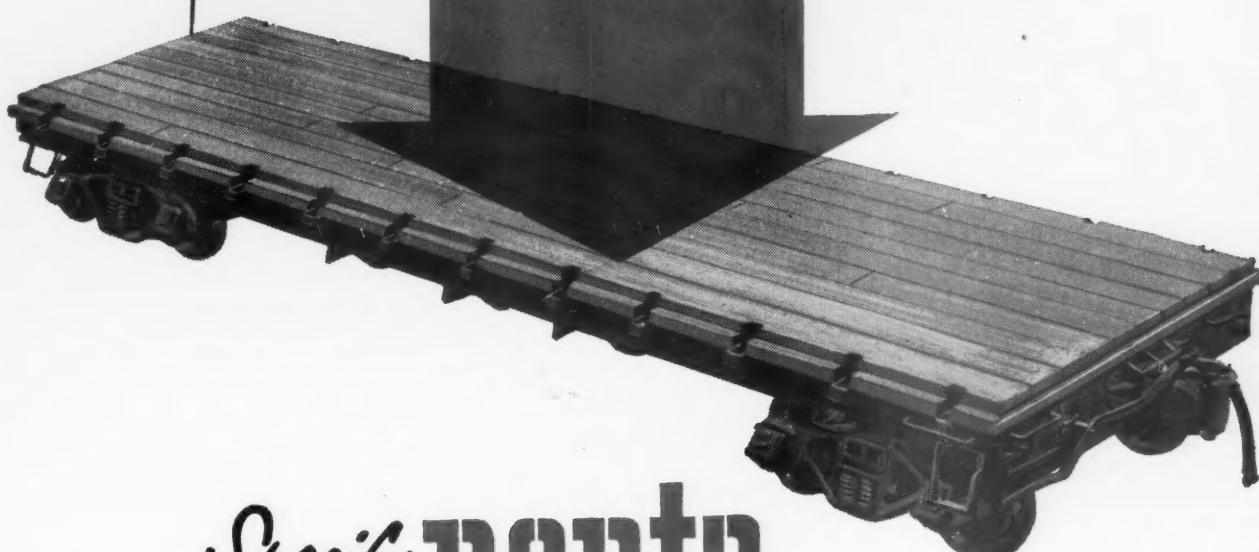
GENERAL OFFICES: DENVER, COLORADO



penta-protected
chlorophenol

DECKING is

- clean
- lasts longer
- will not leach



Specify **penta-**
chlorophenol

THE CLEAN WOOD PRESERVATIVE

It will pay you to treat your decking with PENTACHLOROPHENOL—the clean wood preservative.

"PENTA" gives effective protection against decay. Moreover, its low solubility under severest moisture conditions assures protection that lasts through the years.

Specify the "clean" treatment for your decking and car lumber, as well as your ties, poles and wood platforms. For further information about PENTA write Dow, Dept. PE 34.



HOW "PENTA" PROTECTS TIES!

Newly adzed tie surfaces are protected by brushing or machine spraying with PENTACHLOROPHENOL solution. This is easily done with PENTA, even in coldest weather.

THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN



NICKEL STEEL MUSCLES

strengthen this crane
to
Lift 250 Tons



THIS Diesel powered railway unit provides the greatest lifting capacity of any crane on the rails . . .

And to assure reliability, vital parts of this giant, produced by Industrial Brownhoist Corporation, Bay City, Mich., are fabricated from wrought nickel steels and nickel alloyed steel castings.

Now special long wheelbase, low clearance cars . . . welded and riveted into a single rigid unit . . . utilize heavy side sills made from Mayari-R, a high strength, low alloy steel containing nickel, produced by Bethlehem Steel Company. Bed plate and roller path are 25,000 pound castings furnished by Continental Foundry & Machine Company, East

Chicago, Ind., in heat-treated manganese - nickel - molybdenum - vanadium steel, liquid quenched and tempered to give a tensile strength of 90,000 p.s.i.

A combination of these two high strength nickel alloy steels are used for outriggers which telescope from under the car to form a wide working base. Each large outrigger comprises two Mayari-R plates welded to a pair of heavy I-beams cast in nickel steel.

Similar cast nickel steel is used for roller equalizers and the casting supporting these equalizers. Rollers proper are machined from forged nickel alloy steel, but the mechanism that rotates this crane . . . a slew shaft,

with molded-tooth integrally cast pinion at one end . . . is fabricated from Continental's liquid quenched and tempered nickel alloyed cast steel.

The boom . . . with 250-ton capacity at 17½ feet radius . . . is built of welded Mayari-R to attain maximum strength with minimum weight.

Weight-saving, durability and strength . . . combined with other properties you desire in metals for heavy-duty service may be provided by the correct alloys containing nickel. Send us details of your problems for our suggestions.



Over the years, International Nickel has accumulated a fund of useful information on the properties, treatment, fabrication and performance of engineering alloy steels, stainless steels, cast irons, brasses, bronzes, nickel silver, cupro-nickel and other alloys containing nickel. This information is yours for the asking. Write for "List A" of available publications.



High tensile low alloy steel containing nickel, also nickel-alloyed steel castings and nickel steel shafting play important roles in this railway crane car.

THE INTERNATIONAL NICKEL COMPANY, INC.

67 WALL STREET
NEW YORK 5, N.Y.

CONTROLLED FLEXIBILITY

—spring-controlled construction with ample flexibility to compensate for varying condition of journal box mouth and hinge-lug wear.

LONG-LIFE MALLEABLE IRON

—physical properties that resist corrosion, shock and distortions and lengthen lid life.

TIGHT FIT

—keeps oil in and dust, dirt and water out.

POSITIVE OIL RETURN LEDGE

—keeps oil from seeping out at mouth of journal box; conserves oil and improves lubrication.

Tagged FOR LONGER, BETTER SERVICE

These qualities of NATIONAL FLEXO-4 JOURNAL BOX LIDS not only mean longer and better performance of the lids themselves, but they also increase the essential protection to the journal bearing *under the lid*. They open easily for inspection and close readily.

Specify NATIONAL FLEXO-4 LIDS for new cars and for repairs

JOURNAL BOXES AND LIDS • TRUCKS • COUPLERS
DRAFT GEARS • YOKES

NATIONAL MALLEABLE AND STEEL CASTINGS COMPANY

Cleveland, Ohio

NATIONAL
Products

FOR TRANSPORTATION
AND INDUSTRY



Est.

1868



Pittsburgh CARHIDE

Protects New-Type Freight Cars!

Durable, quick-drying synthetic finish improves appearance of Pennsylvania Railroad's Merchandise Service Cars equipped with Load Retainers

ONE of the best examples of the confidence many leading railroad companies have in Pittsburgh Railway Finishes is the use of CARHIDE by the Pennsylvania on some of its new-type giant Merchandise Service Cars.

These extra-long box cars, which carry more than double the average loading of merchandise freight without damage, are used for expedited movements throughout the Railroad.

Pittsburgh CARHIDE provides

maximum protection and adds to the appearance of such cars. It goes on easily and dries within a few hours. Its smooth, extra-durable surface stays live, tough, and elastic, resists cracking and peeling caused by extremes in temperatures and retains its brilliant gloss.

Why not use CARHIDE on your wood or metal freight cars? Call on us for advisory service. Our wide experience often can save you time and money.

PITTSBURGH RAILWAY FINISHES FOR EVERY NEED

CARHIDE—For wood and metal freight cars of all types.

LAVAX SYNTHETIC ENAMELS—for locomotives and passenger cars.

STATIONHIDE—to add beauty and comfort to stations.

IRONHIDE—for iron and steel structures.

SNOLITE—for signs, fences, cattle-guards and crossing gates.

PITTSBURGH PLATE GLASS COMPANY, Industrial Paint Division, Pittsburgh, Pa.

Factories: Milwaukee, Wis.; Newark, N. J.; Springdale, Pa.; Houston, Texas; Los Angeles, Calif.; Portland, Ore. Ditzler Color Division, Detroit, Mich. The Thresher Paint & Varnish Co., Dayton, Ohio. Forbes Finishes Div., Cleveland, Ohio.



PITTSBURGH PAINTS

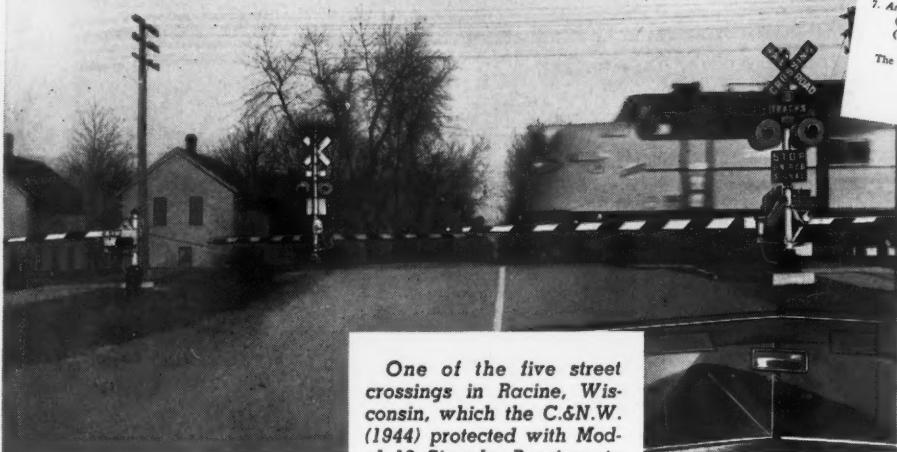
PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

PITTSBURGH PLATE GLASS COMPANY

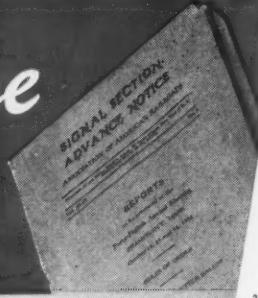


's and Sense

COST ANALYSES
PROVE THE ECONOMY OF
Model 10
CROSSING
PROTECTION



One of the five street crossings in Racine, Wisconsin, which the C.G.W. (1944) protected with Model 10 Signals. Previous to the installation of Model 10's, these crossings were guarded by watchmen and manually operated gates. Train speeds through Racine were limited, by city ordinance, to 30 m.p.h. Since Model 10's were placed in service, this ordinance has been repealed.



Normal automatic operation is provided at all five crossings, with manual supervision superimposed at two crossings, from one elevated tower, 16 hours per day, and at the remaining three crossings, from another elevated tower, 24 hours per day. There are 44 to 46 through train movements and 10 to 12 switching movements over these crossings daily. These trains include the "400" streamliners between Chicago and Milwaukee, and prior to the installation of these automatic gates the City of Racine enforced an ordinance limiting train speeds to 30 m.p.h. After the gates were installed the ordinance was repealed.

Economic Statement

1. Cost of Installation:	
(a) Chargeable to capital investment	\$39,870.00
(b) Chargeable to operating expenses	1,000.00
(c) Chargeable to accrued depreciation	2,625.00
(d) Total	
2. Gross Saving per Annum	\$42,495.00
3. Increased Maintenance and Operation per Annum	\$20,569.00
4. Net Saving Exclusive of Interest Charges	5,239.00
5. Interest (5% of \$39,870.00)	\$15,330.00
6. Net Saving	2,332.00
7. Annual Return above Interest Charges:	\$12,998.00
(a) On capital investment (d + 1-a)	33.43%
(b) On total cost (d + 1-d)	30.58%

The Committee presents economic data on other installations in Table I.

Action Recommended
Acceptance as information.

This economic statement* covering five crossings at Racine, Wisconsin, tells a typical dollar and cents story of Model 10 protection. To the net saving in cash, add the saving in human life. That's the true picture of Model 10 economy.

*Committee reports, Signal Section, A.A.R.



SEND FOR
BOOKLET

Get your copy of
"GRADE CROSSING SAFETY
IS YOUR BUSINESS," a new
24-page illustrated brochure depicting a hundred years of progress in grade crossing protection. It's free.

Write for No. 748-RA9

Model 10



AUTOMATIC GRADE CROSSING SIGNALS
PRODUCT OF
WESTERN RAILROAD SUPPLY COMPANY
CHICAGO 8, ILLINOIS

LEADING MANUFACTURER OF GRADE
CROSSING SAFETY DEVICES — MAKER
OF RAILWAY SIGNALING ACCESSORIES



MODEL 10 DESIGN HAS BEEN IMITATED, BUT
MODEL 10 PERFORMANCE NEVER DUPLICATED

U.S. Pat. No. 2,137,196 2,362,710, 2,372,579 Pat'd in Canada 6-27-39

IN SERVICE 10 YEARS and 10 months

The real proof of performance and endurance is the service record.

A car set of Holland Style A (now obsolete) Volute Snubber Springs was attested by A.A.R. 1948 report* as having been in "road" service for ten years and ten months! No other unit tested showed a service record for anywhere near this length of time.

Furthermore, in 1948 a check of 35 cars built in 1936 and 1937 showed 53.6% of Holland Style A Snubber Springs still under the cars!



*This record appears on page 75, of the FIRST PROGRESS REPORT, 1948 Road Test Program, made by A.A.R. Operations and Maintenance Dept., dated September 1, 1949.

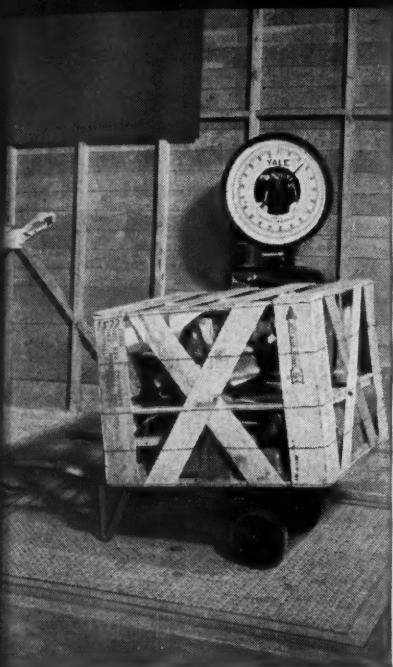
**Now we offer you
test-and-time-proved**

LATEST DESIGN A-7-A
HOLLAND VOLUTE SNUBBER SPRING

The new, many-times-improved Holland A-7-A Volute Snubber Spring was tested in 1949 by A.A.R. and made a splendid record.

HOLLAND
COMPANY

332 S. MICHIGAN AVE., CHICAGO 4, ILLINOIS



Cost-Cutters

HAVE THE RIGHT OF WAY

Moving freight, handling stores, or lifting maintenance items—railroads are always on the go. To combine material handling efficiency, speed and safety with lower costs, more and more lines are adopting Yale Hoists, Trucks and Scales. For these money-saving tools contribute greatly to the smooth, economical operation that makes "on time" really mean what it says.

Yale Material Handling Machinery has a world-wide reputation for doing a job—and staying on the job. The line is so complete, selection is easy for your particular needs. Ask our railroad representative nearest you for all the facts about the many types of Yale Hand Lift and Power Trucks, Hand Chain and Electric Hoists, and Dial Scales. Once you know their quality and performance features, you'll give Yale cost-cutters the "right of way" on your line. Phone or write today.

CHICAGO 1, ILL.
The Earl E. Thulin Co.,
Suite 339, Hotel Sherman

NEW YORK 17, N. Y.
Eastern Rwy. Sup., Inc.
110 East 42nd Street

ST. LOUIS 1, MO.
Clarence Gush
Railway Exchange Bldg.

ST. PAUL 4, MINN.
Robert J. Wylie
612 Pioneer Bldg.

San Francisco 5, Calif.
Overland Supply Co.
55 New Montgomery St.

WASHINGTON 5, D. C.
Ralph W. Payne
Metropolitan Bank Bldg.

**THE YALE & TOWNE
MANUFACTURING COMPANY**

Department L-109

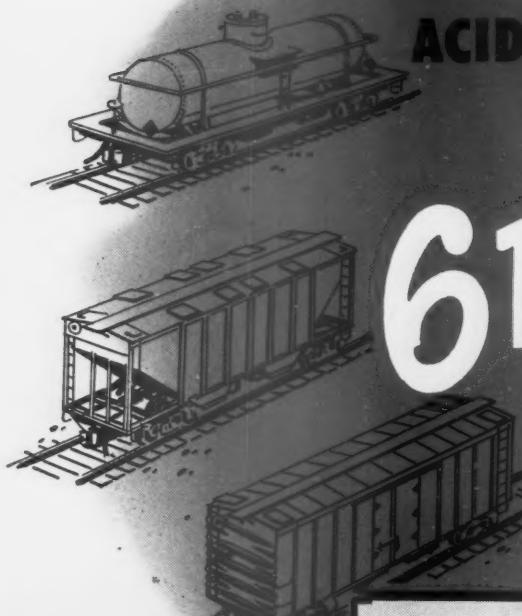
Roosevelt Boulevard

Philadelphia 15, Pa.

TRADE **YALE** MARK

INDUSTRIAL HANDLING MACHINERY • hoists . . . hand and electric • trucks . . . hand lift and power • industrial dial scales

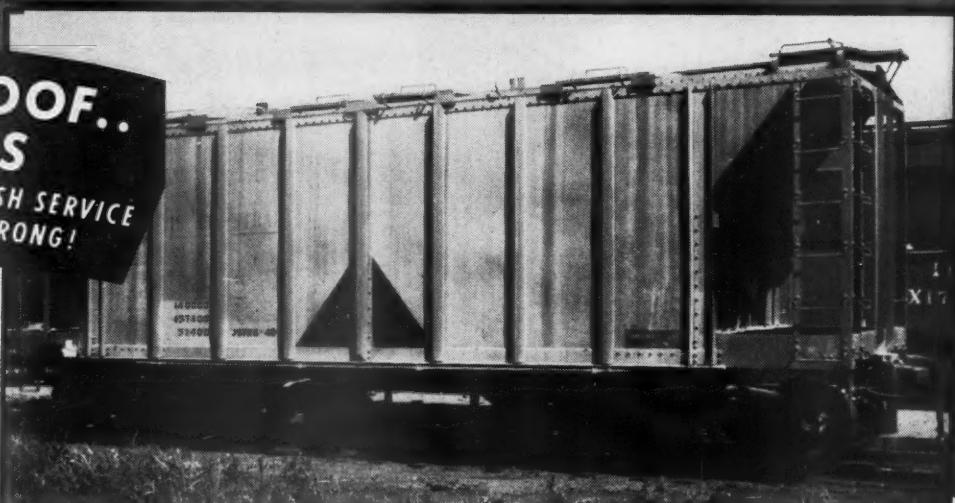
NOW... a new super
 ACID and ALKALI-RESISTING FINISH
 with up to
6 TIMES LONGER LIFE...
 SHERWIN-WILLIAMS
CARCLAD



HERE'S PROOF...
3 YEARS

IN CEMENT AND SODA ASH SERVICE
 AND STILL GOING STRONG!

Illinois Central covered hopper car
 painted with S-W Carclad 3-coat sys-
 tem in September, 1946. Inspection
 after 3 years shows film condition on
 this car still excellent . . . corrosion
 almost non-existent even where sledge
 hammers have been used to break
 cargo loose. Dark streaks are stains
 washed down from roof beneath toe
 plates.



**GET FREIGHT CARS ROLLING
 FASTER with S-W FLASH-DRY**

Another product of Sherwin-Williams research in
 special finishes for the railway industry, this
 synthetic paint greatly speeds up refinishing schedules
 on steel freight equipment.

Succeeding coats can be applied in 30 minutes,
 under normal conditions. Initial film is tougher—
 gloss and color are retained longer—dirt retention
 is reduced—better protection and appearance are
 insured for longer periods of exposure. Ask for
 demonstration.



Here's good news—and new added years of service for covered
 hoppers, tank cars and refrigerator cars!

CARCLAD—a product of Sherwin-Williams research—now
 makes possible totally new, long-lasting protection against the
 corrosive effects of cargoes which quickly destroy ordinary finishes.

Now proved in more than three years of service, CARCLAD
 provides exceptional resistance to acids, soda ash, sulphur,
 alkalies, phosphate, common salt, cement, gasoline, kerosene,
 sour crude oil and alcohols. It has unusual resistance to abrasion
 and withstands repeated scrubbing. CARCLAD dries with the
 speed of lacquer . . . makes possible a one-day finishing system.

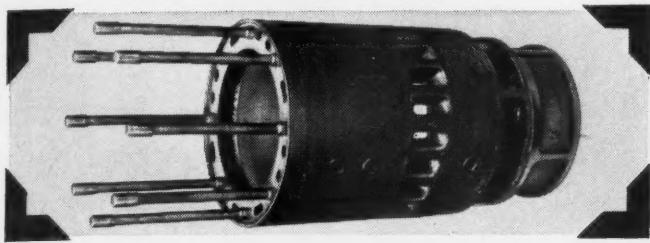
If you have not already initiated your own tests with CARCLAD,
 investigate—today! See your Sherwin-Williams representative or
 write The Sherwin-Williams Co., Transportation Division,
 Cleveland 1, Ohio.

**SHERWIN-WILLIAMS
 RAILWAY FINISHES**

STANDARD ENGINEER'S REPORT

LUBRICANT	RPM DELO Oil R.R.
UNIT	<i>Locomotive Diesel G.M. 567B</i>
TRAIN	<i>"California Zephyr"</i>
SERVICE	<i>San Francisco-Salt Lake</i>
FIRM	<i>Western Pacific R.R. Co.</i>

Only 0.002 inch cylinder wear in 1/2 million miles!



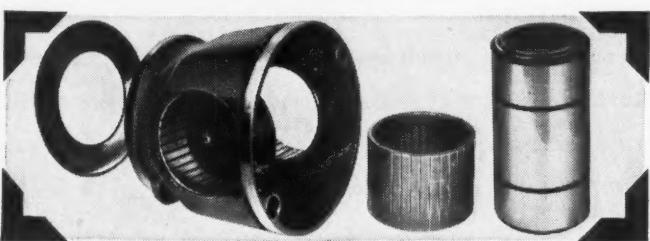
515,720 MILES WITHOUT REPLACEMENT of a single part was the record for all 48-cylinder assemblies in a "California Zephyr" diesel locomotive when this one was pulled for inspection. Lubricated with specially compounded RPM DELO Oil R.R., the engines stay in continuous service a full million miles without time off for overhaul!



"THE CALIFORNIA ZEPHYR," new streamliner with Vista-Dome cars, runs daily both ways across the continent. Only 3 diesel locomotives keep it on schedule between San Francisco and Salt Lake.



NO RING TROUBLE or lacquer deposit problems have been encountered in this long service, as this unretouched photo of the piston indicates. The cylinder "miked" only 0.002 inch taper and 0.005 inch out of round.

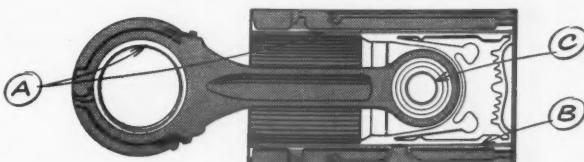


WRISTPIN BUSHING IN PERFECT CONDITION! Measurement proved the bushing was still "standard" after the more than $\frac{1}{2}$ million miles of service! RPM DELO Oil R.R. will not corrode silver bushings. All parts were put back in service.



Trademark "RPM DELO" Reg. U. S. Pat. Off.

How RPM DELO Oil R.R. prevents wear, corrosion, oxidation



- A. Special additive provides metal-adhesion qualities . . . keeps oil on parts whether hot or cold, running or idle.
- B. Anti-oxidant resists deterioration of oil and formation of lacquer . . . prevents ring-sticking. Detergent keeps parts clean . . . helps prevent scuffing of cylinder walls.
- C. Special compounds stop corrosion of any bushing or bearing metals and foaming in crankcase.

FOR MORE INFORMATION about this or other petroleum products, or the name of your nearest distributor, write or call any of the companies listed below.

STANDARD OIL COMPANY OF CALIFORNIA • San Francisco

THE CALIFORNIA OIL COMPANY • Barber, N.J., Chicago, New Orleans

STANDARD OIL COMPANY OF TEXAS • El Paso, Texas

THE CALIFORNIA COMPANY • Denver, Colorado



PENNSYLVANIA RAILROAD

Uses
FABREEKA
*On Steel Deck
Bridges*

**Two Steel Deck Bridges at Baltimore, Maryland
Equipped with Fabreeka Pads**

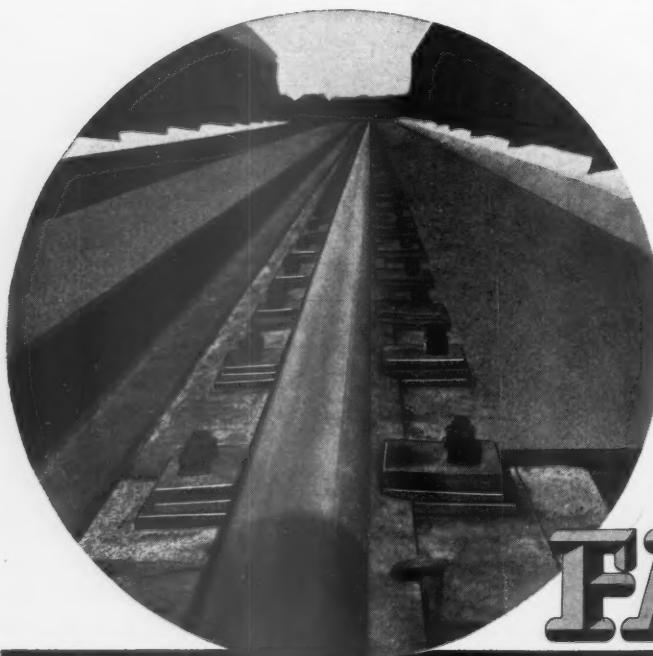
Close-up photograph of a short section of rail on one of the single track bridges which eliminate grade crossings between Baltimore and Sparrows Point, Maryland. The lower photograph shows a length of track on the other bridge of this type in this neighborhood. It is a double track structure.

On both bridges Fabreeka Pads were installed between the steel deck and the base of the rail and also between the top of the rail base and the hold-down clips to absorb impact shocks, isolate transmitted vibration and reduce noise.

Because Fabreeka absorbs impact and isolates transmitted vibration it greatly reduces the tendency for cracks to develop in the steel decking. Its use also permits the elimination of ties which saves approximately 8" of track fill approaching the overhead type bridge. For an underpass the same saving is possible in excavation.

The isolation of rail and fastenings on deck bridges very noticeably reduces the noise of train crossings. And, the clips stay tighter longer.

Because it has limited resiliency, no permanent "set" and extremely long life Fabreeka is the ideal material to absorb impact shocks, isolate transmitted vibration and reduce noise. It is widely used in track structures at such points as crossings, turntables, track scales, in place of ties on steel and concrete deck bridges, and between bridge supports and concrete foundations.



It Pays to Specify

FABREEKA

FABREEKA PRODUCTS COMPANY, INC.

222 SUMMER STREET, BOSTON 10, MASS.

More and More Steel— Better and Better Cars

NAILABLE STEEL FLOORING

Marks Another Great Advance
In Boxcar Development

Step by step, unit by unit, steel won its way in boxcar construction until it had supplanted less durable materials in all main units but one. The floor—because blocked loads must be held by nailing—remained unchanged. . . . Then came NAILABLE STEEL FLOORING—combining superior strength and easy nailability—and now the boxcar, in all parts subjected to stress and hard use, is truly a *steel* car.

Just as each added use of steel—in underframes, ends, body framing, sheathing and roofs—lowered costs of operation and maintenance, so does its newest use in NAILABLE STEEL FLOORING. You can't beat steel for resistance to stress and wear—you can't equal NAILABLE STEEL FLOORING for durability, freedom from breakthroughs, and maximum protection for either blocked or loose freight.

PATENTS PENDING

GREAT LAKES STEEL
Corporation

Steel Floor Division • Ecorse, Detroit 29, Michigan
UNIT OF NATIONAL STEEL CORPORATION

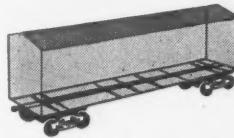
Evolution of the Boxcar

CHIEFLY WOOD



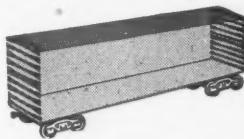
In 1880, steel was used in boxcars only in trucks, truss rods, couplings, fittings and accessories. Cars of those days needed frequent repairs, were short lived.

STEEL UNDERFRAMES



Steel became a major factor in boxcar construction when it began to be used in underframes. As a result of its greater strength, downtime for repairs and maintenance costs were substantially reduced.

STEEL ENDS



Breakthroughs caused by the sliding of ladings upon sudden stops were common until steel ends came into use. Again, the greater strength of steel resulted in reduced costs.

STEEL BODY FRAMING



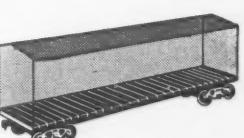
The more steel, the more strength—and body framing of steel worked a further reduction in maintenance and repair costs.

STEEL ROOFS AND SIDES



With the addition of steel side sheathing and steel roofs, the only non-steel part subject to stress and wear was the floor. Because nailability was essential, it remained unimproved.

NAILABLE STEEL FLOORING



Here is the latest important step in the gradual change to steel construction. NAILABLE STEEL FLOORING, made of corrosion-resisting NAX HIGH-TENSILE steel, has proved its excellence—by providing a superior surface for all types of boxcar freight, and by standing up under heavy freight and modern mechanical handling equipment.





You WON'T see this on an
Adlake-equipped train!

Adlake Windows need
Never be removed
for cleaning!

Because the famous Adlake "breather" prevents fogging and condensation on inside glass surfaces, Adlake Double-Glazed Windows never need to be taken apart for cleaning! They save you money by eliminating costly maintenance—and, since there are no dehydrants or drying compounds to change, Adlake "breather" windows remain on the job continuously except for the replacement of glass

broken in service. Even when service breakage occurs, lengthy, costly "out-of-service" periods are unnecessary—for only the broken glass needs replacement! No need to ship the sash unit back to the factory, no waste of time and money—replacement of broken panes is made right on your own property!

For complete information on Adlake's money-saving "no-maintenance" operation, drop a card to The Adams & Westlake Company, 1109 Michigan, Elkhart, Indiana.



Established 1857

ELKHART, INDIANA

New York

Chicago

Manufacturers of Adlake Specialties for the Railway Industry

S P
(Highly)

G A
(End G
As)

F E

AGE
Ne

PERMANENTLY LUBRICATED WITH SILICONE OIL

Designed as an Integral Working Part of VAPOR FLEXIBLE METALLIC CONDUITS

The First Gasket that does all this...

Withstand high pressures

Stops fuel and steam waste from first to last car—no matter how long the train or how nasty the weather

Won't crack under extreme temperature changes

Prevents steam leakage at joints

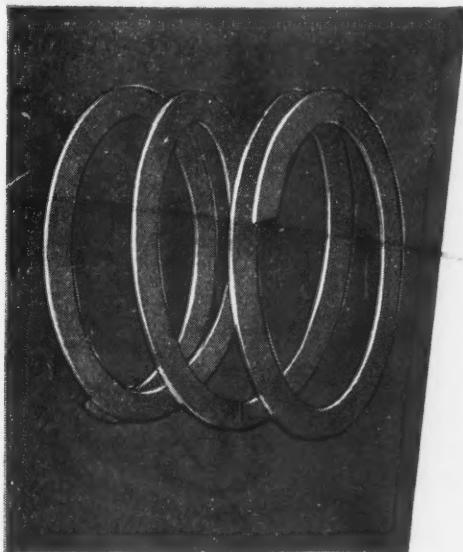
Permanent lubrication of inner and outer surfaces of gasket

Requires no wearing in period to achieve perfect seal

Permanent Silicone Oil lasts the full life of the gasket

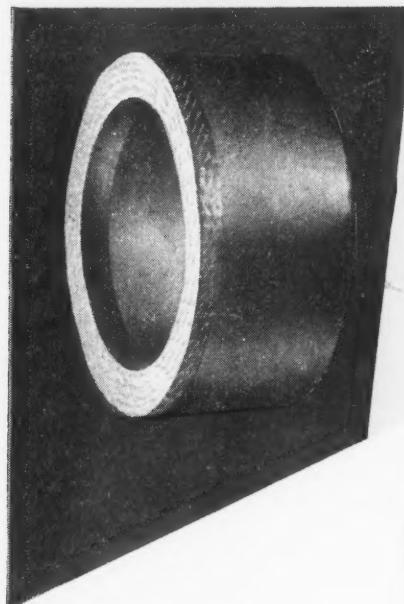
SPRING

(Highly Tensile steel)

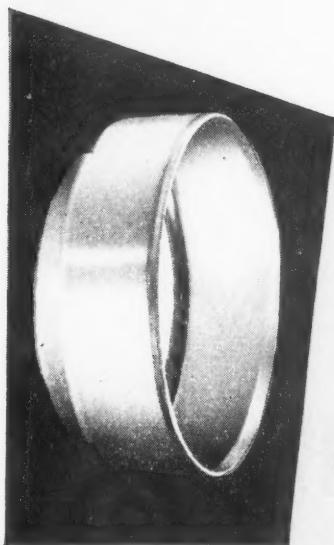


GASKET

(End Grain Laminated Asbestos Face)



FERRULE



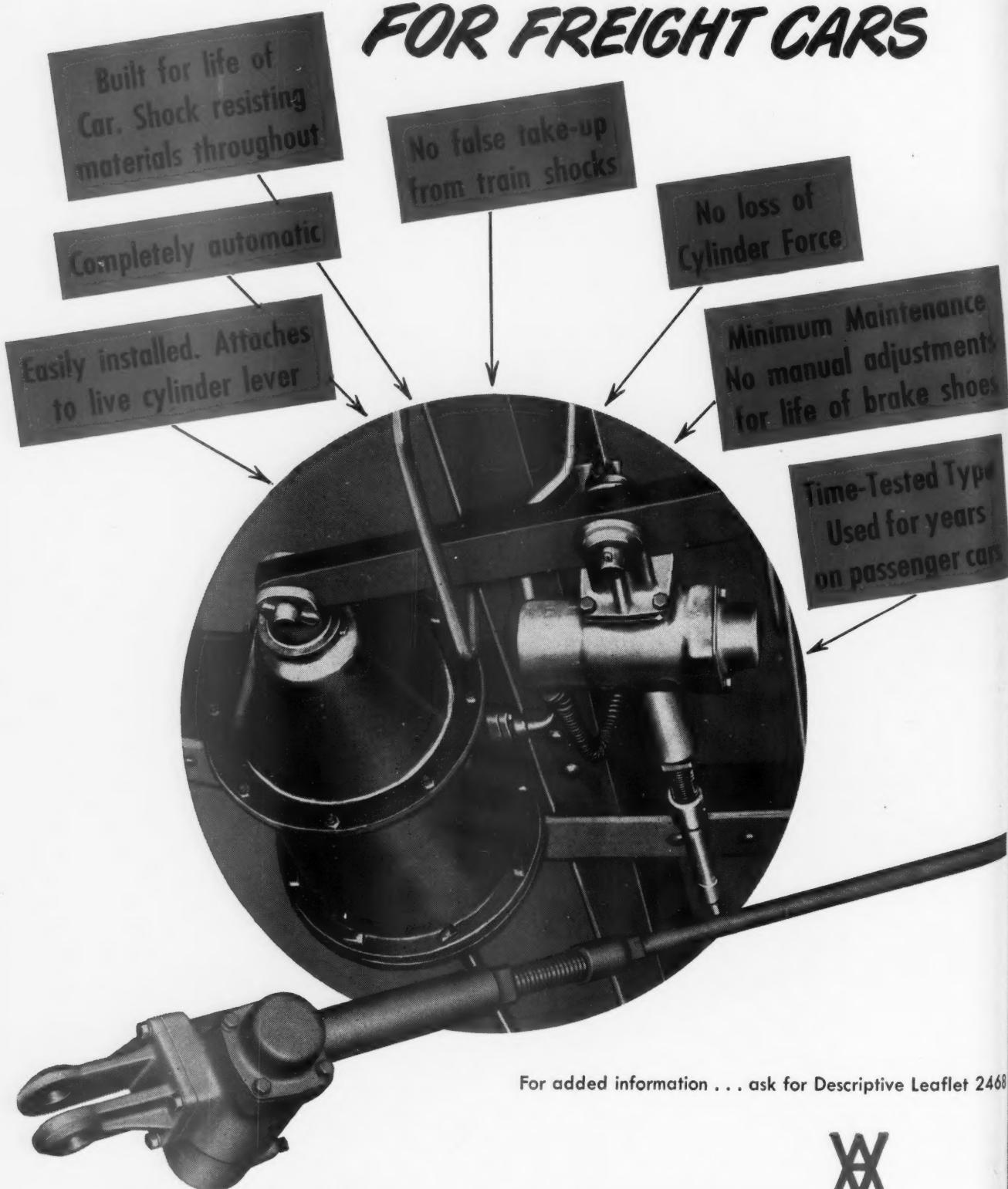
In stock, End Grain Laminated Asbestos Face Gaskets last indefinitely without deterioration of any kind. Order your requirements now and be ready with the finest gasket for the best conduit in the railroad field.

Improves Car Heating—Lowers Maintenance Costs—Write for Bulletin 527

80 EAST JACKSON BLVD., CHICAGO 4, ILLINOIS

New York • St. Paul • Cleveland • St. Louis • Denver • Washington • Philadelphia
San Francisco • Portland • Jacksonville, Florida • Houston, Texas • Montreal

Here...a PNEUMATIC AUTOMATIC SLACK ADJUSTER FOR FREIGHT CARS



For added information . . . ask for Descriptive Leaflet 2468

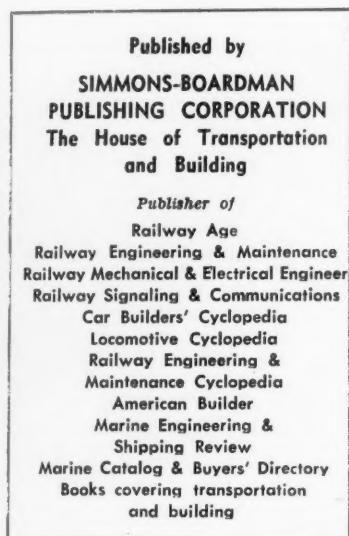
Westinghouse Air Brake Co.

WILMINGTON, PA.



RAILWAY AGE

With which are incorporated the Railway Review, the Railway Gazette, and the Railway-Age Gazette. Name Registered in U. S. Patent Office and Trade Mark Office in Canada.



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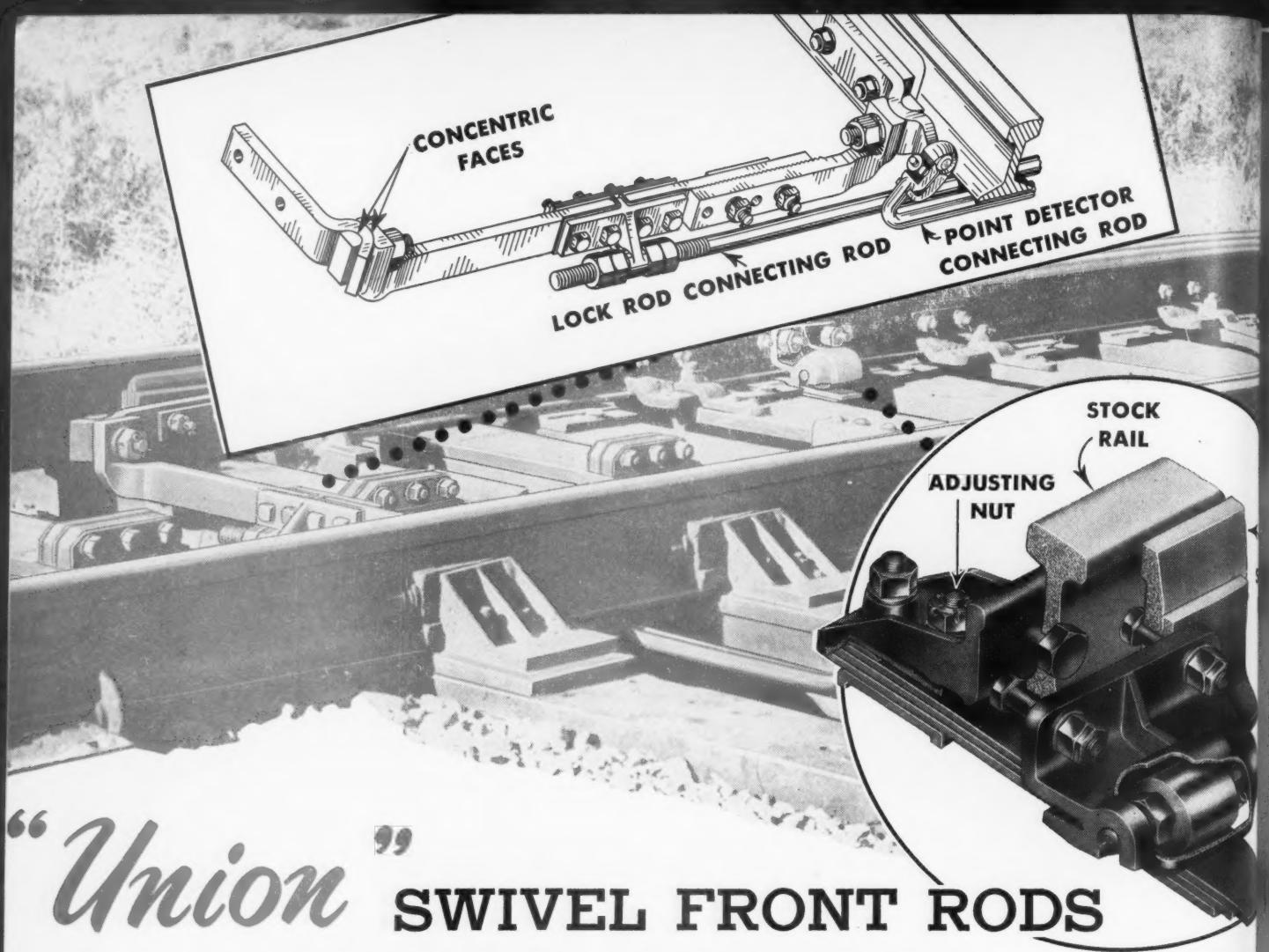
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WEEK AT A GLANCE

A.R.E.A.: Next week, at Chicago, the 51-year-old American Railway Engineering Association will hold its forty-ninth annual convention. The detailed program for the three-day meeting appears on page 57, immediately preceded by a general article calling attention to some of the convention highlights, and accompanied by special messages from F. S. Schwinn and H. M. McFarlane, presidents, respectively, of the A.R.E.A. and the National Railway Appliances Association.

"EXHIBIT IN PRINT": Beginning on page 61 is a special "Exhibit in Print," consisting of brief descriptions—many of them illustrated—of some 79 new and improved products and devices of special interest to railway engineering and maintenance officers. In the absence of any physical exhibit of such products at this year's A.R.E.A. convention, *Railway Age* is glad to be able to present them in this form for the information of its engineering readers.

A.A.R. LABORATORY: One of the high spots of the A.R.E.A. convention will be an inspection trip to the new A.A.R. Research Laboratory on the campus of the Illinois Institute of Technology on Chicago's South Side, which, although not entirely completed, was occupied on March 1. A complete illustrated description of the \$600,000 building, and a list of projects now under way by the Engineering, Mechanical, Refrigerator Car, Container, and Sanitary research staffs which it will eventually house, appears on page 48. G. M. Magee, research engineer of the A.A.R.'s Engineering Division, is the well-qualified author.

ENGINEERING EXPENDITURES—1950: Railroads in the United States and Canada expect to make total engineering expenditures of more than \$2 billion in 1950—\$1,725,000,000 for maintenance, around \$300,000,000 for improvements to fixed property, and \$17,500,000 for some 8,600 units of work equipment and power tools—according to a *Railway Age* survey of 33 companies operating over three-fifths of the total U.S. and Canadian mileage. Impressive as are these figures—which are presented in more detail on page 52—they are probably on the conservative side. Certainly if traffic improves, as has been rather widely predicted, there is every prospect that many of these programs, particularly for capital investment in new or improved facilities, and in work equipment, will be substantially enlarged.

WHAT SOURCE OF FUTURE ENGINEERS? Evidence, much of it previously reported in this paper, continues to pile up to show that engineering and technical schools no longer offer, to the extent they once did, training in railroad subjects; that engineering students, as a whole, have less interest than in earlier years in taking up railroad careers. The schools, in turn, seem to feel that the railroads themselves have shown too little interest in their graduates—and there is some evidence of uncomfortable truth in their assertions. As the editorial on page 47 points out, the time

is ripe for a coordinated study of relationships between the railroad industry and those educational institutions capable of training future railroad officers.

IN THE WEEK'S NEWS: Operating strike threat on N.Y.C.—Conclusion of transport hearings before a subcommittee of the House.—Mitchell cleared for reappointment to I.C.C.—Higher commutation fares in New Jersey.—January revenues and earnings.—Electrification study.—More car and locomotive orders.—End of I.C.C. coal conservation orders.—Total abandonment recommended by I.C.C. examiner for Virginia & Truckee.—Appeal of district court decision on joint rail-water rates.—February car deliveries.

TRANSPORTATION IN THE CABINET? Rapid generation of political pressure for Cabinet representation for the transportation industry—either directly through a new department, or indirectly through the secretary of commerce—puts up to the railroad industry the difficult question of taking a definite stand for or against the proposition. Our leading editorial, exploring the various alternatives and discussing some of the pros and cons of each, comes to the conclusion that the issue is too important just to let nature take its course; for reasons of prestige, if nothing else, the railroad industry must have some opinion on the matter.

"EIGHT WHEELS AND A BOX": Fundamentally, that's what the standard railway box car is, but it's not by any means all that it is. In a larger sense, it is a product of nearly a century of continuous evolution—a product designed to stand up under rugged use, to move anywhere, to be repaired economically (and, also, anywhere). An interpretive, non-technical review of its evolution, and of what is being done toward its continued development, is given on page 91 by A. N. Campbell of the Canadian National.

HEADS WE WIN—TAILS YOU LOSE: That the Brotherhood of Railroad Trainmen "seeks to retain the benefits of the Railway Labor Act and is unwilling to accept its remedies and obligations, procedural or otherwise" is the conclusion to which a D.&R.G.W. emergency board was "driven" by the brotherhood's refusal to agree upon any settlement procedure which would have bound it to accept the findings made. But the brotherhood, while reserving to itself the right to accept or decline any of the board's awards, told the board that it "would expect the carrier to comply with decisions favorable to the brotherhood." This completely one-sided interpretation of the law—this effort to secure all possible benefits, while rejecting any obligations—led the board to do some pretty sharp talking in the report which it submitted this week to President Truman, and which is summarized in the News pages. Those pages also give a list of points at issue between the railroads and the trainmen's and conductors' unions on their \$290-million demands for a 40-hr. week in yard service and for more "feathers" in working rules.



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DO THE RAILROADS WANT TRANSPORTATION IN THE CABINET?

Unless war should suddenly break out, the railroad industry can hardly hope much longer to avoid the adoption of a positive position either for or against (1) the centering of all government promotional, and some administrative, functions for all transportation agencies in a new Department of Transportation, with a secretary in the President's Cabinet, or (2) centering these functions in a bureau of the Department of Commerce.

Strong Political Pressure

Evidence accumulates that strong, and perhaps irresistible, political pressure is being generated in favor of giving representation in the Cabinet to the transportation industry—either through a new department, or through the secretary of commerce. The so-called "Hoover Commission" on reorganization of the government favors the Commerce Department alternative, while signs multiply that the Administration may come out at any time with a proposal to establish a new Transportation Department, which was favored by the "task force" for the Hoover Commission, and is strongly advocated in the Brookings Institution study, "National Transportation Policy." It is perhaps not generally appreciated what a well organized, widespread, and nonpartisan "drive" is being carried on in behalf of the entire list of reforms for the promotion of economy and ef-

ficiency in government proposed by the Hoover Commission.

The proposal, apparently favored by the Administration, of giving transportation a Cabinet secretary of its own, does not go counter to the Hoover Commission proposal in principle, but only in a matter of detail. No serious disagreement is likely to arise, therefore, among those advocating centralization in the executive department of transportation promotional and administrative functions, regarding such a relatively incidental question as whether the job should be located in a new department or put into the Department of Commerce. The political cleavage, if any develops, is more likely to arise between those who, on the one hand, want promotional functions for all transportation agencies centralized; and, on the other hand, those who want no change from the present setup. The highway promoters, the waterway promoters, and the airway promoters—each has its own federal bureau now, and they are doing all right for themselves. None of these groups agrees with the others on anything except their general disregard for the public interest in the maintenance of railroad transportation.

If the railroads should decide to oppose the centralization of promotional and administrative functions under some Cabinet officer, they should do so with their eyes wide open to two strong probabilities, viz.—

(1) That they will find arrayed against them, not only the Administration but the whole conscientious, public-spirited and bipartisan organization which is insisting on the adoption of the entire list of Hoover Commission reforms; and

(2) That they may have the trucking interests, the barge enthusiasts, and the air lines as their only political associates in opposing the innovation.

The question of whether or not it would serve the public interest to establish a bureau, or a separate department of Cabinet status, to exercise promotional and administrative functions in transportation is not one which can be answered from experience. Logic certainly favors centralization in promotion, if promotion is going to continue; but putting any power over transportation in a political department undeniably gives rise to genuine dangers. Whether the advantages—that is, of depositing in one part of the executive branch of the government positive responsibility for the welfare of *all* meritorious agencies of transportation—outweigh the danger of increased political control over the transportation industry is one of those questions to which only intuition can give an answer. Many railroad men would doubtless prefer the centralization of promotion—as they do that of regulation—under the Interstate Commerce Commission, but there now seems little chance of gaining support outside the industry itself for this possible alternative.

No Easy Choice

The absence of an easy choice does not make it possible to evade choosing. This paper's predilection, since a choice is unavoidable, would be to go along with the Hoover Commission report, in principle—if for no other reason than that the company of its proponents is more agreeable and respectable than that of its opponents is likely to be. Those who have serious misgivings at strengthening the power of the executive branch of the government in transportation will, of course, oppose the change, and should do so—but they should fully realize that their position will not be an easy one to explain and defend, especially to the more thoughtful and public-spirited part of the electorate, who seem inclined to accept all of the Hoover Commission program because of their faith in the ability and disinterestedness of the man who headed it.

Should not an industry with as little political influence as the railroads agree upon an axiom for political action, to some such effect as follows: *Never use your limited resources of political power except on issues which are vitally significant to you?* No legislator, regardless of how well disposed he is, is going to vote "for the railroads" on a sharply controversial issue more often than once in a while. If you ask for and secure his vote on an issue of no great significance, he will consider that he has done his duty by you for a considerable period of time and his support may thereafter be lost on some question of really vital importance. For example, most of

the legislators thought they had done enough "for the railroads" to last a couple of decades when they enacted regulation of truck transportation, which was a Pyrrhic victory if ever there was one. If this analysis is sound, then it would follow that the railroads should not oppose centralization of promotion and administrative functions in the executive branch of the government, unless they are persuaded beyond a reasonable doubt that such a move would be highly dangerous.

Importance of Details

If deep conviction is absent on this question, so political effort does not have to be exerted in combating the Administration and the supporters of the Hoover Commission report, then the modest supply of political influence the railroads do have can be concentrated upon the effort to improve important details of the proposed innovation. These matters of detail are important. For one thing, there are the alternatives of centering promotional and administrative functions in the Commerce Department, or establishing an entirely new Department of Transportation.

Either of these alternatives can be favored without violence to the principle advanced by the Hoover Commission. In favor of the proposal that a Transportation Department be established is the fact that the importance of the industry would thus be accorded due political recognition—for instance, in such a practical situation as getting steel allocations in a time of scarcity. Against the proposal is the consideration that a government department is always endeavoring to increase its authority over a wider area—possibly inviting a move toward government ownership of transportation on the part of ambitious bureaucrats. The danger from such ambitions would, presumably, be less acute if these functions were centered under the secretary of commerce—who has a pretty big job already, and might be expected to be less tempted to seek further expansion of his authority than would a secretary of transportation.

Another question of detail which is also highly important is the proposal of the Hoover Commission to transfer supervision of railroad safety to the Department of Commerce (or, presumably, to the new Department of Transportation if that were established). Any railroad manager can readily appreciate the dangers to the industry if a political department should get hold of this power.

The great railroad industry, or some substantial segment of it, cannot afford, for reasons of prestige if none other, to have no opinion at all on an issue as important as this. For a long time railroad people have been criticizing the governmental setup which permits the lavish expenditure of federal funds on the development of highway, waterway and airway facilities, without coordination among the parallel government groups who do this planning, and with

none of the planners being obliged to give thought to the maintenance of adequate railroad facilities. Now that a specific program has been proposed to correct the condition which so many railroad men have criticized, it is up to the industry (a) to support the proposal; (b) to offer an alternative solution; or (c) to refrain henceforth from criticizing the government's unequal dealing as among the various agencies of transportation.

By not acting positively in favor of either alternative (a) or alternative (b) the railroads will automatically be in the position of choosing alternative (c), which would certainly be fatal to all hopes of correcting the serious disabilities under which the industry now labors.

RAILWAY ENGINEERS— WHERE FROM IN THE FUTURE?

With attention focused on engineering activities—as in the week of March 13 the forty-ninth annual meeting of the American Railway Engineering Association is in progress—the time is appropriate to consider where the railroads are going to get their engineers in the future—and other specially trained men for employment in all departments. There was a time when the railroads looked to the colleges and universities to supply a large part of their requirements for young engineers; and many technical graduates with specialized training in railway subjects eagerly sought railroad employment. More recently, the interest of the schools and their students in railroading has dwindled alarmingly; and the situation will grow still worse unless corrective measures are taken.

As reported in an article in the December 17, 1949, issue of this paper, a survey of colleges by Paul J. Claffey, instructor-civil engineering of Catholic University of America, showed that of the 122 schools of the country that provide civil engineering curricula, only 5 now place emphasis on railroads, and only 10 others provide one or two courses in railway engineering; railway engineering is ignored by 87 per cent of the schools. In contrast, 39 of the schools place emphasis on highway engineering, 73 give one or two courses specifically devoted to highway construction and maintenance, traffic, and administration, and 19 offer one or two courses in airport construction and design.

Substantiating Mr. Claffey's findings, Lawrence W. Wallace, a counselor on management, told the seventieth annual meeting of the American Society of Mechanical Engineers last December that, based on a survey of 75 presidents and faculty members of 34 recognized mechanical engineering institutions throughout the country, failure of the railroad in-

dustry to attract and retain college graduates, especially mechanical engineers, presents a threat to the industry's future.

Many on the railroads decry the declining interest of the schools in turning out graduates with specialized railway training. The schools, on the other hand, retort that they have had to prune their curricula of railway courses because the railways, as compared with many other industries, have shown little or no interest in their graduates. That there is truth in this assertion is corroborated by the Committee on Co-operative Relations with Universities of the American Railway Engineering Association, in its current report.

Several railroads are doing an outstanding job in maintaining close relations with various schools in their respective territories; they address and interview students; and they employ selected graduates each year.

This process also must be carried on by other railroads if the interest of students and educational institutions is to be revived and maintained. The colleges, like any industry, are engaged in producing a product, and there must be an active demand for the product if the institution which is producing it is to stay in business. The product of educational institutions must change as demands change, just as certainly as a manufacturer's product must change in similar circumstances.

Mr. Wallace says that, to remedy this situation, the railway industry must conduct a coordinated study of its "relationships with educational institutions, including graduates and students, methods of recruiting, conditions and terms of employment and carrier opportunities." He insists that the efforts of individual railroads, however competent, will be inadequate to so large a task.

Far too many people in America today are thinking in terms of security and welfare when they should be thinking in terms of opportunity and aspirations for improvement and achievement. Naturally we all wish to avoid bankruptcy, which would mean the loss of our savings and the depreciation of everything we own—but the real danger is that too many people are not sufficiently concerned about the solvency of our nation. . . . With our present high national income there is no justification for further increasing our national debt and increasing taxes—we cannot expect continued prosperity if we do so. Certainly if we cannot balance our budget during good times it will be increasingly difficult to do so when business levels off to a normal peace-time basis, as it surely will. . . . National security rests upon national solvency, upon economic well-being in family and individual life, and upon the ability of organized business to gain enough to carry on its operations with a reasonable return on investment to those who have put their money into business.

—From an address by Paul H. Van Hoven, president of the Duluth, Missabe & Iron Range, at the 26th annual meeting of the D. M. & I. R. Veteran Employees' Association.



The new central research laboratory of the Association of American Railroads in Technology Center at the Illinois Institute of Technology, Chicago, is a two-story structure, 218 ft. by 50 ft.

The research activities of the Association of American Railroads will shortly be transferred to a new Central Research Laboratory on the campus of the Illinois Institute of Technology on the near South Side of Chicago. Its construction reflects the growing importance of research in the railroad industry. The need for more intensive research comes not only from a greatly increased cost of labor and material, but in recognition that the modernization of the railroad plant and equipment, with the introduction of new types of motive power, lightweight trains and the general speeding up of movements in both passenger and freight service, may bring developments as to the performance of the materials in this more exacting service to warrant intensive study such as is now under way or is planned.

The new building, although not entirely completed, was occupied on March 1. It is a modern two-story structure, with basement, 218 ft. long by 50 ft. wide, and will provide complete facilities—offices, laboratories, and drafting and conference rooms, with auxiliary adjacent trackage—for carrying out the many and varied activities of the Engineering, Mechanical, Refrigerator Car, Container and Sanitary research staffs of the association. Thus, the new Central Research Laboratory of the association will serve as the nerve center for the research work of the vast railway industry. Through the varied activities of its staff, in conjunction with the association committees, other research institutions, and the railway supply and equipment industries, it will make available to the railroads a wealth of scientific knowledge such as will promote economies in operation, provide improved service for the traveling and shipping public, and contribute measurably to the safety of operations.

Present Facilities Outgrown

The association has been handling an increasing amount of research work for the railroad industry because to do so affords a medium of conducting such work with the most modern techniques on the comprehensive basis required, and yet with minimum cost to individual railroads. Much research work which the association has conducted for the industry has been contracted to established research institutions and universities. The association's research staff not only directs this work and makes a detailed analysis of the results obtained, but it conducts its own research in

A. A. R. Laboratory

the field under actual service conditions, in selected test areas, involving both roadway and equipment.

Prior to the opening of the new laboratory the association's research forces and their equipment had headquarters in an office building at 59 E. Van Buren street, Chicago, immediately adjacent to the city's elevated loop. This building also houses various departments of the association. Not only were the facilities there inadequate for the expanding forces, it was also quite impossible properly to care for the highly valued testing equipment provided for research purposes.

A determination by the railroads that much of their huge loss and damage expense was due to the inadequacy of many of the shipping containers used resulted in their approval of the establishment of a container research laboratory, and the decision to place this facility in the Chicago area led to a survey for a location where a laboratory could be constructed of ample proportions to accommodate all of the research activities of the association, except that maintained near Perth Amboy, N. J., for its Bureau of Explosives. The sanitary research forces of the association, now established at Baltimore, Md., will be moved into the new laboratory early in the summer.

In determining where the building should be located, important considerations were that it should be conveniently accessible from the downtown area for the many railroad officers, and particularly committee members, who would have occasion to consult with the research staffs, and that side-track facilities be available. The near south side seemed to be the most logical location in the circumstances, and the development of the new Technology Center of the Illinois Institute of Technology offered a very attractive opportunity for providing a suitable location, together with the further advantage of being affiliated with this institute in its educational and research activities.

The Technology Center development extends from Thirty-first to Thirty-fifth streets, and from Michigan boulevard on the east to the New York Central tracks

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Opens New Horizons in Railroad Research

Building nearing completion at Chicago, at a cost of \$600,000, will afford ideal facilities for conducting investigations of Engineering, Mechanical, Refrigerator Car and Container divisions

on the west—a total of approximately 100 acres. The program of Illinois Institute contemplates complete rebuilding of this area, with modern functional buildings, all of the same architecture, to house its educational and research activities and to provide apartments and dormitories for its faculty and students. Mies Van der Rohe, noted Chicago architect, and head of the Department of Architecture of the institute, has planned the entire layout for the Technology Center, including the type of architecture used in the buildings, the general layout of the buildings, landscaping, drives, etc. The style of architecture is simple in line, yet attractive, and affords economical maintenance, excellent light, and a pleasing interior.

Dr. Henry T. Heald, president of Illinois Institute, and the institute board have been most receptive and helpful to the A. A. R. in working out the plans for the new research facilities of the association in Technology Center. A cooperative agreement was entered into between the institute and the association covering the essential features of financing, construction, ground rental, maintenance, heating, lighting, etc.

A tract of land 622 ft. by 100 ft., between Thirty-first and Thirty-second streets, and between Federal street and the New York Central tracks, was made available for the laboratory site. In addition, an adjoining area immediately to the east was made available for future use of the association under option.

Study was given to the amount of space required for the activities of the association, with the result that a two-story building, 50 ft. by 218 ft., with a full size basement, was decided upon. The building is of modern functional design, of steel and brick construction. The exterior walls consist largely of plate glass windows,

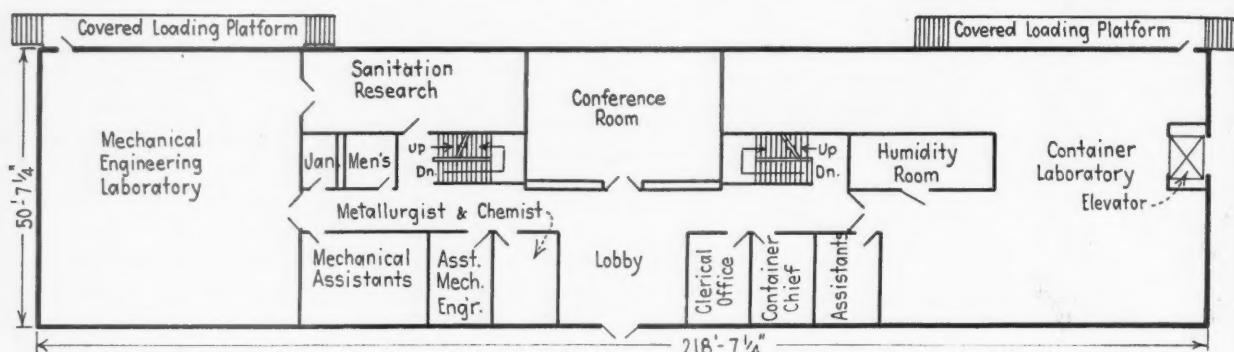
By G. M. MAGEE
Research Engineer, Engineering Division,
Association of American Railroads

providing excellent light, with aluminum frames for economy in maintenance. The brick used is buff-colored face brick. The stairways and the first floor corridors have terrazzo floors. Elsewhere in the buildings the floors are covered with black and white asphalt tile, except in the laboratories, which have smooth-finished concrete.

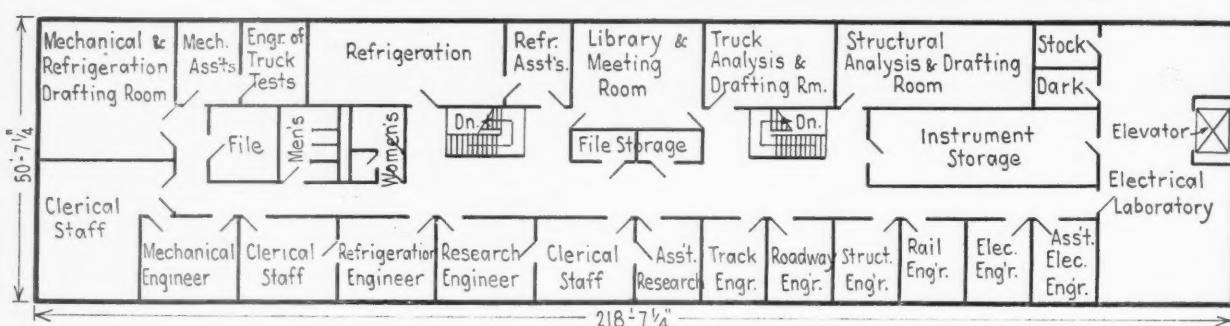
Acoustical ceilings are provided in all offices and working rooms, except laboratories. Plaster walls are painted with a neutral shade of sand beige. All windows have Venetian blinds. All furniture in the laboratory, except chairs, is of steel construction. Chairs are of aluminum with plastic upholstery. The building is heated by steam furnished by the institute's central power plant.

Assignment of Floor Area

The second floor of the laboratory will house the general administrative officers, providing offices for the research staffs of the Engineering, Mechanical and Refrigerator Car divisions, together with drafting, analysis and computing rooms for analyzing data and preparing reports. This floor also provides an electrical laboratory for servicing the association's electronic stress-measuring equipment. With this equipment stresses and vibrations can be measured in any component of the track structure, bridges, or rolling stock under any conditions of operation. This provides a means for developing improvements in design and for



Above—First floor of the laboratory is occupied largely by the Mechanical Division and Container Research forces and facilities. Below—The second floor of the laboratory houses the general administrative officers and the entire research staff of the Engineering Division



accurately determining the range and frequency of stresses which the materials used must be able to withstand. An instrument storage room, a stock room, and a developing room are also provided on this floor. Ultimately, the detector car research activities of the association, now elsewhere in Chicago, will be moved to this floor of the laboratory.

The north half of the first floor includes the container testing laboratory, a controlled humidity room, and offices for the container testing staff. The laboratory will be equipped with various types of impact and vibration testing machines designed to subject packages to shocks and vibrations corresponding to those which they might be expected to receive in shipment. Woodworking facilities are provided so that study can be given to the fabrication of suitable shipping containers. In the humidity room tests will be made of the strength of materials used in container construction under controlled humidity conditions.

A conference room on the first floor will accommodate 50 persons and is equipped with a projection screen. It will be used for instruction in methods of packaging, as well as for such other general conference purposes as may be required. For added comfort, this room is provided with forced-air ventilation.

The south end of the first floor houses the mechanical testing laboratory, in which will be provided equipment for making certification tests pertaining to designs and materials as prescribed by the Mechanical Division in connection with interchange rules. Offices are also provided for most of the staff members who will operate the mechanical laboratory, as well as for a portion of the staff engaged in railway sanitation research.

The basement of the building is full size, with a 12-ft. ceiling, and is provided with windows and forced ventilation. It is of concrete throughout, and will house those types of testing equipment which can be located most advantageously at ground level. A good part of the basement area will be devoted to storage. However, in the north end a 24-ft. by 48-ft. inclosed room is provided for housing the laboratory station wagon and truck.

An elevator is installed at the north end of the building for transporting equipment. It serves all three levels and also may be entered directly from an outside loading dock at truck tail-board height. There are two loading docks on the west side of the building for handling shipments that may come in by railroad car.

The laboratory will be served by a siding leading from the adjacent New York Central main line, and trackage on the laboratory grounds will consist of a track serving the two loading docks and a 600-ft. impact testing track. The latter will be used for making tests by impacting two cars together at predetermined speeds to determine the effects of the shocks encountered in coupling.

Occupancy of the new laboratory does not involve the immediate employment of more than a few additional persons. The Engineering Division research staff housed in the building consists of the research engineer, assistant research engineer, electrical engineer, assistant electrical engineer, three electrical assistants, track engineer, assistant track engineer, roadway engineer, structural engineer, two assistant structural engineers, four test assistants, bridge draftsman, chief clerk, and stenographer-clerk.

The research staff of the Mechanical Division

quartered in the laboratory consists of the mechanical engineer, assistant mechanical engineer, engineer of truck tests, five mechanical assistants, draftsman, stenographer-clerk, and typist-clerk.

The research staff of the refrigerator car investigation at the laboratory includes the chief engineer, assistant engineer, chief draftsman, draftsman, two test engineers, office engineer, and a stenographer. The staff of the container testing laboratory consists of a chief engineer, two test engineers, a maintenance assistant, and a stenographer-clerk. The staff to be engaged in railway sanitation research will consist of a research engineer, field engineer, and a stenographer-clerk.

Engineering Research Projects

The research projects being progressed by the Engineering Division research staff, working primarily for the Construction and Maintenance section (American Railway Engineering Association), are as follows:

Metallurgical examinations at the University of Illinois and statistical reports of rail failures to insure that the quality of new rail purchased is maintained to the highest standard.

Continued research in improved methods of detecting internal defects in rail in track by detector cars.

Investigation of shelly spots and head checks in rails at the University of Illinois and Battelle Institute, in an effort to find means of improving the metallurgy to eliminate these types of defects.

Service tests of joint bars for the new 115- and 132-lb. RE rail sections, together with rolling-load tests at the University of Illinois to study possible further improvements in design and metallurgy.

Investigation of driver burns at the Southern Railway laboratory, with a view of determining the most satisfactory procedure of repairing driver-burned rail by welding.

Rail design investigation, including field and laboratory measurements to establish whether the range of stresses developed in the new rail sections, with the new drillings, are within the fatigue strength of the steel.

Investigation of stresses in tie plates to improve the design with respect to stresses in the plates and the rail base, and to minimize tie wear.

Bolt tension and rail joint lubrication investigation, including service tests, to compare the effects of various types of lubricants in protecting against corrosion and so-called frozen joints and broken bolts.

Investigation of corrosion from brine drippings for developing an inhibitor that can be added to the salt in refrigerator cars to inhibit the corrosive action of the brine on cars, track and bridge structures.

Study of stresses in manganese frogs for the prevention of cracks in the flangeways of manganese frog castings.

Tests of rail anchorage to determine the creepage forces developed during train passage and the holding power of anchors grouped in different arrangements.

A service test of tie-plate fastenings to determine the effects of various types of fastenings, tie pads, etc., in preventing mechanical wear and prolonging tie life.

A field investigation of impact and bridge stresses, and analysis of the impact effects in bridges from high-speed Diesel-electric and steam locomotives.

Investigations of floorbeam hangers, rocker shoe assemblies, and waterproofing of railway structures being carried out at Purdue and Northwestern universities under the direction of the laboratory staff.

Application of soil mechanics to roadbed stabilization, involving field and laboratory studies at the University of Illinois of various means of roadbed stabilization, their effectiveness under various conditions, and the most desirable techniques.

Investigation of the wear and splitting of ties—a co-operative undertaking of the National Lumber Manufacturers Association and the Association of Ameri-

can Railroads for the purpose of prolonging the life of crossties by reducing mechanical wear, seasoning, and checking and splitting.

Mechanical Division Projects

Research projects of the Mechanical division are:

Axle research—Investigation of alloy-steel axles.

Crank pin research—Laboratory tests of hollow-bored, heat-treated crank pins, and investigation of special designs recommended by the General committee.

Tests of lubricants for roller bearings.

Geared hand brakes—Revision of test rack for certification of lever-type brakes. Additional brakes certified for acceptance in interchange service.

Tests of truck side frames and bolsters.

Brake beam tests—Static testing of modified brake beam designs for joint subcommittee. Progression of revised Specifications for A.A.R. Brake Beams.

Freight truck and snubber research—Continuation of road testing (by rolling laboratory) of snubbers, package-type snubbers, and high-speed freight car trucks, for eventual evaluation.

Certification of journal box lids to new specification.

Investigation and tests of various mechanical car shake-out devices.

Investigation and tests of metal running boards as the basis for revision of current specifications.

Refrigerator Car Projects

Research projects of the Refrigerator Car Division are:

The development of detailed reports on pallets, power lift trucks, and the changes necessary in refrigerator car construction to accommodate pallet loading. Changes will be necessary in the size and character of refrigerator car doors and the strength of the floors, and recommended methods of accomplishing these changes will be proposed. These studies will also include refrigerator car clearances and elevations, loading ramps, and methods of fastening commodities in refrigerator cars.

During the summer detailed studies and tests will be conducted on the refrigeration obtainable from ice and salt mixtures.

Field tests will be conducted and studies made on the proper location for icing plants, looking toward the elimination of unnecessary operations.

Studies will be continued looking toward the use of better insulation and methods of application, eliminating moisture condensation. These studies will lay the foundation for more extensive work of this character during 1951.

Continued research work on the economical use of new refrigerator systems.

Functions of Container Laboratory

The container testing laboratory will be used as a training ground for transportation inspectors, receiving clerks, foremen, claim adjusters, and others having similar duties with the railroads and the Railway Express Agency. This personnel will be able to obtain through frequent instruction classes reliable information concerning the performance of different types of shipping containers and methods of packing, and thus be in a position to give railroad patrons constructive assistance. All shippers, both large and small, can become acquainted with accepted methods of determining the adequacy of containers, and be in a position to prepare specifications for the various container manufacturers supplying the shippers' needs.

The research on sanitation to be carried out at the laboratory under the sanitation research engineer will involve the study of both plant facilities and equipment in the development of approved standards in sanitation.

Maintenance Construction

Revisions of grade and alignment will continue to be prominent in the 1950 railway construction scene

The estimated \$300,000,000 to be expended for fixed property additions and betterments in 1950 is somewhat smaller than expenditures for comparable improvements during the last several years, and parallels, even percentagewise, the drop taking place in capital spending throughout U. S. industry generally—variously estimated to be in 1950 from 10 to 15 per cent below 1949 levels. However, so far as the railways are concerned, any 1950 dip in capital expenditures will not be precipitous but

more a leveling off from previously high totals. With incompletely work totaling more than \$200,000,000 carrying over from 1949, little of which can be suspended economically, the railways, more than many other industries, can be expected to continue a high level of construction activity.

Furthermore, since the character of railway improvements to fixed properties has changed in recent years from that of expanding capacity to one of promoting



The large savings that result from the installation of automatic crossing protection are expected to increase the activity in this type of improvement work during the year

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Expenditures Up for 1950— to Keep Pace with Business Conditions

greater operating efficiency, declines in traffic, such as are now in progress, tend to a certain extent to spur capital improvements rather than retard them. Thus, unless general business conditions reach the proportions of a continuing recession, it can be expected that, in addition to the construction work now in progress, a considerable number of new projects will be started to permit realizing as quickly as possible the operating advantages in such improvements. In fact, with a general resumption of work in the coal mining industry, general business conditions are expected to improve quickly, and with such improvement is certain to come a gradual stepping up of railway construction activity.

However, the present uncertainty of business is definitely reflected in the reluctance of most roads to make public their immediate plans for improving their properties. Out of 33 roads replying to an inquiry from *Railway Age*, only 19 placed a dollar value on their anticipated 1950 capital expenditures. Of these, 12 reported that their expenditures would be less than in 1949, 4 indicated more would be spent, and 3 roads reported their budgets would be about the same as last year. Of the remaining roads, 6 merely reported their construction activities would be about the same as last year, while 6 other roads reported less work in progress, and one road only gave details of individual jobs, without committing itself to a total budget.

Paralleling the situation of a year ago, 49 per cent of the roads giving detailed information as to their budgets indicate they plan improvements to their locomotive-handling facilities. However, contrary to the trend of the last several years in which Diesel servicing facilities and shops have made the headlines, the largest locomotive handling improvement program projected on a single road in 1950 is one totaling \$3,000,000 for the modernization of steam locomotive facilities at two locations. Four of the many Diesel shop and servicing facilities that will be in progress during 1950 will cost at least \$1,000,000 each, and in all the projects in this category will total more than \$11,000,000.

Revisions of grades and alinement constitute the second largest category of capital improvements planned for 1950 by the railroads that gave definite information as to their budgets. In this category seven roads plan to spend a combined total of more than \$6,000,000—most of which will represent 1950 charges to work carried over from 1949.

Yard improvements, the category in which more roads were active in 1949 than in other recent years, will be less numerous during 1950. Only slightly more than \$4,000,000 has been budgeted for this class of work by 11 roads, only one of which plans to spend more than \$1,000,000. However, at least one other

The railroads of the United States and Canada will spend more on the maintenance of their fixed properties in 1950 than last year, despite the uncertain revenue situation resulting from strikes and other conditions that have affected traffic prospects unfavorably. It is estimated that outlays for maintenance of way and structures will total about \$1,725,000,000 this year. In addition, capital expenditures of around \$300,000,000 for fixed property additions and betterments are in prospect, and \$17,500,000 will be spent for new work equipment and power tools.

These estimates are based on information obtained by *Railway Age* from the engineering officers of 33 representative railroads, accounting for 62 per cent of all the operated mileage of the United States and Canada. It is obvious that the figures are quite conservative, both because it is questionable whether, with the higher wage rates now in effect, they represent any increase over 1949 in the physical magnitude of the work to be performed, and also because the programs of the individual roads have been worked up under the disturbing influence of the prolonged coal strike and related unsettled business conditions. If widely held expectations of a substantial improvement in the volume of traffic begin to be realized, there is every prospect that many of these programs will be substantially enlarged, particularly for capital investments in the great number of projects for which plans are ready where the immediate return will be highly attractive.

road that did not give specific information is continuing a very large yard job in which it has been engaged for several years.

In spite of an apparent reluctance to commit themselves, railway engineering officers imply that signaling construction may be increased during 1950. In this work the protection of highway and pedestrian traffic at grade crossings will receive increasingly more attention. The advent of the 40-hour week with its high basic wage rates permits greater savings to be made by the installation of automatic protection at grade crossing than by probably any other single item of improvement work. As a result, it is estimated that the number of crossings at which additional protection will be installed during 1950 may total 2,000. This compares with 789 actual installations during 1946, 1,084 in 1947, 1,391 in 1948, and 1,571 in 1949. Grade crossing eliminations will probably continue to be undertaken in about the same number as during 1949. The reports of 22 roads state that they have in progress, or expect to participate in, a total of 153 projects during the year, and that others may be undertaken at the behest of state highway departments.

The railroads of the United States and Canada will

spend on the maintenance of their fixed properties in 1950 slightly more than was spent in 1949. On the basis of specific information received by *Railway Age* from 29 roads, maintenance expenditures of all the roads of the two countries will total about \$1,725,000,000. This is about \$300,000,000 more than it was expected they would spend in 1949, when estimates were assembled at this time of the year.

Of 15 roads reporting that their maintenance budgets will be larger in 1950 than last year, practically all agreed that the expected increase is due either to higher wage rates now in effect or to the large amount of work that had to be deferred in the latter part of 1949 because of strikes and uncertain business conditions. Only seven roads reported that their budgets would be smaller this year than last, while the same number of roads indicated their expenditures would be about the same as in 1949. Of the 33 roads which gave detailed information as to their budgets, 32 reported that they intend to lay a total of 1,102,722 net tons of new rail during 1950. One of these roads indicated that it would lay as much as 130,000 net tons, but no other road plans to install more than 80,000 tons. The road not included in the 32 reported it would lay no new rail during the year, but indicated that a considerable amount of second-hand rail would be installed.

On the basis of this information, it is estimated that all the railroads in the United States and Canada will lay a total of 1,700,000 net tons of new rail during the year. It is interesting to note that, in spite of priority controls or shortages that reduced the amount of new rail that was available for installation in every year since 1940, only 11 roads reported that they had any deferred maintenance in their rail account. These 11 roads reported that their deferred maintenance varies from a negligible amount to a maximum equal to a two years' program. Of these 11 roads, only 5 indicated that they expect to make up any of their deficiency during the current year.

To assure full service life for their newly laid rail, as well as to keep other portions of their track riding as well as possible, the officers of 31 roads reported that they plan to surface out-of-face a total of 16,290 mi. of track during 1950. To accomplish such a program of track raising and surfacing work, these roads expect to use 19,281,520 tons of ballast, or 852,505 tons more than the same roads applied in 1949. In the course of this raising and surfacing work, these 31 roads plan to install 23,759,610 crossties. Almost half of the roads replying indicated that their tie renewals would be heavier in 1950 than in 1949, the amount totaling 1,070,826 ties. The other half indicated that they would install 995,869 fewer ties, making a net increase of approximately 75,000 ties. Adjusted over the entire mileage of the two countries, it is estimated that the number of crossties that will be installed during the current year will exceed 38,000,000, or about 5,000,000 ties less than all roads planned, at this time last year, to install in 1949.

According to studies on deferred maintenance made by the Bureau of Valuation of the Interstate Commerce Commission, the installation of about 17,000,000 ties was deferred in 1949, bringing the cumulative total since 1941 to 89,308,000 ties. The bureau points out, however, that, "while this may seem to be a substantial amount, it actually represents only about 1½ year's normal installation of creosoted ties, the average life of which is approximately 25 years."

While more money is being allotted this year for the maintenance of track, larger budgets have also been prepared for the maintenance of bridges and buildings. In reply to questions relative to the amount of money to be spent for these classes of work during 1950, 24 officers reported that they would spend more than \$32,000,000 on bridges, and \$43,000,000 on buildings. More extensive bridge maintenance work is planned this year on 11 roads, less on 4, and about the same on the remaining 9. At the same time building work will be greater in 1950 on 8 roads, less on 5, and about the same on 11 roads.

More Work Equipment Needed

To hold maintenance expenses to the minimum, and at the same time accomplish as much work as is planned, railway officers indicate they will buy about 8,600 power tools and machines in 1950, at a cost of about \$17,500,000.* These estimates are believed to reflect merely the minimum needs of the railways, rather than what they will probably buy if general business conditions improve to the extent expected. All officers giving detailed information agreed that the need for mechanization, and the opportunities for dollar savings thereby, have never been greater. With the basic economies of work equipment enhanced by the shorter work-week and higher wage rates, and the high productivity of equipment required to accomplish the maintenance work necessary if the railroads are to hold down costs and get essential work done, it would seem that nothing but continued unsettled business conditions and further reductions in traffic could possibly prevent the railways from purchasing work equipment at an accelerated rate.



Rail programs call for a total of about 1,700,000 net tons to be laid this year by the railroads in the United States and Canada

*A more detailed discussion of equipment purchases appears in the March Equipment Economics issue of *Railway Engineering and Maintenance*.

A.R.E.A. convention and Exhibit In Print SECTION



RECORD OF A YEAR'S PROGRESS

The absence of a regular manufacturers' exhibit during the A.R.E.A. convention has prompted *Railway Age* to present in the following pages an exhibit-in-print of products of direct interest to railway engineering and maintenance officers. This "exhibit" consists of both advertisements by interested supply companies and editorial descriptions of new products that were introduced during the past year or existing products in which improvements were made during this period. These articles, kept as brief as possible to permit rapid perusal by the busy railway officer, truly comprise an exhibit-in-print for all members of the National Railway Appliances Association, as well as for a number of other interested manufacturers who were requested to submit suitable material.



Special Features Add Zest to A.R.E.A. PROGRAM

The program of the Forty-Ninth annual convention of the American Railway Engineering Association, presented in detail on the opposite page, reveals that, in addition to the usual fare, there will be some "trimmings" this year, which are calculated to add considerable interest to the proceedings. As in the past, however, the mainstay of the business sessions will be the presentation of the reports of the standing committees. These committees, now numbering 21, will this year present reports on a total of 110 different subjects.

Among the unusual features of the program will be a series of relatively brief addresses, presented in connection with the committee reports, which will deal with subjects related to the work or the fields of activity of the various committees. There will be 17 such addresses, all presented by men qualified by training or experience to discuss the particular subjects.

Other highlights of the meeting itself will be the presentation at the opening session on Tuesday morning of an honorary membership in the association to E. M. Hastings, past president of the association and chief engineer of the Richmond, Fredericksburg & Potomac, and the annual luncheon on Wednesday at which the principal speaker will be W. G. Vollmer, president of the Texas & Pacific.

What may be classed as an extra-curricular activity for those attending the convention will be an inspection trip to the new Association of American Railroads laboratory nearing completion on the campus of the Illinois Institute of Technology at a cost of about \$600,000. Members of the research staff of the association will be "at home" at the new laboratory on Monday, March 13, for the benefit of members of the A.R.E.A. who may wish to inspect the facilities informally then. The formal inspection trip is scheduled to take place late Tuesday afternoon. On that day the convention's afternoon session will adjourn at 4:00 p.m. to permit members to catch a special train to the laboratory, which will leave the La Salle Street station over the New York Central at 4:45 p.m. Returning, the same train is scheduled to arrive back at the station at 6:30 p.m.

The charge for the round trip will be 62 cents. For the convenience of those wishing to join the inspection group a representative of the New York Central will be on hand Tuesday in the fourth-floor foyer of the Palmer House to sell identification badges, which will serve in lieu of regular train tickets.

All the regular sessions of the meeting will be presided over by President F. S. Schwinn of the association, who is assistant chief engineer of the Missouri Pacific Lines, Houston, Tex., assisted by Vice-President G. L. Sitton, assistant chief engineer, Southern System, Washington, D. C. In the accompanying statement President Schwinn extends greetings to those attending the meeting, expresses his appreciation of their efforts in furthering the work of the association, and calls atten-

To the Members and Friends of the American Railway Engineering Association:

As this A.R.E.A. Pre-Convention issue goes to press, many of you are already on your way to attend the annual meeting of the American Railway Engineering Association to be held in the Palmer House, Chicago, March 14, 15 and 16. I regret that it will not be possible for all of you to be present during our several sessions.

To those of you, not members, who will have joined with us at this meeting, "greetings." We welcome you and assure you of several days well spent in learning, first hand, of the activities, the planning, the research work, and the recommendations of the men engaged in the construction and maintenance of your railways. The information which you may gather can be highly valuable.

To the members in attendance, permit me to say "I thank you." Without the work you have performed or supported there would be no occasion for this meeting. Without your attendance there could be no meeting. And I hope that your attendance will serve as an incentive to do even more in the future than you have in the past. Your industry needs and must have your best effort.

To the publishers and editors of *Railway Age* and of *Railway Engineering and Maintenance*, I wish to express sincere appreciation for the fine cooperation given the association through publicizing this meeting and its objectives. This is but another example of their continuing interest in all those things that point to the welfare of the railway industry.

To all interested in this betterment of the industry, permit me to remind you of the importance of research and of the opportunity to inspect the new research laboratory which has been constructed by the Association of American Railroads on the campus of the Illinois Institute of Technology. This opportunity will be afforded you at 4 p.m., Tuesday, March 14. Do not miss it.

F. S. SCHWINN,
President,
American Railway Engineering Association

tion to the inspection trip to be made to the research laboratory.

In the absence of a manufacturers' exhibit during the meeting an "exhibit in print" of new or improved products of interest to railway engineering and maintenance officers is presented in the following pages. President H. M. McFarlane of the National Railway Appliances Association, in the accompanying statement, expresses his appreciation of this "exhibit" and urges that it be given careful attention.

**To the Members of the
American Railway Engineering Association:**

The members of the National Railway Appliances Association welcome this opportunity to bring greetings to the officers and members of the American Railway Engineering Association as they complete the first year in the second half-century of their service to the railways in their forty-ninth annual meeting. We appreciate also the opportunity to be represented in this Exhibit-in-Print of *Railway Age*, especially in a year in which there will be no physical exhibit of our products, and recommend your careful attention to the displays on following pages. Our group looks back on many pleasant years of cooperation with the A.R.E.A., acknowledges the friendly cooperation it has always received in return, and pledges anew its continuing support to the association in the years that lie ahead.

H. M. McFARLANE,
President,
National Railway Appliances Association



F. S. Schwinn



H. M. McFarlane

PROGRAM
Palmer House, Chicago

TUESDAY, MARCH 14

Morning Session—9:45 a.m.

Address by F. S. Schwinn, President
Reports of secretary and treasurer

Address by J. H. Aydelott, vice-president, A.R.A.

Presentation of Honorary Membership to E. M. Hastings

Reports of Committees on

Water Service and Sanitation, H. E. Silcox, Chesapeake & Ohio, chairman (reports on eight of ten assignments)
Highways, W. J. Hedley, Wabash, chairman (reports on all six assignments, with Manual recommendations)
Cooperative Relations with Universities, S. R. Hursh, Pennsylvania, chairman (reports on all three assignments)

Afternoon Session—2:00 p.m.

Reports of Committees on
Uniform General Contract Forms, O. A. Olsen, Chesapeake & Ohio, chairman (reports on three of four assignments, with Manual recommendations)
Buildings, A. G. Dorland, Elgin, Joliet & Eastern, chairman (reports on three of eight assignments, with Manual recommendations)
Records and Accounts, M. F. Mannion, Bessemer & Lake Erie, chairman (reports on five of seven assignments, with Manual recommendations)
Economics of Railway Location and Operation, C. H. Blackman, Louisville & Nashville, chairman (reports on five of seven assignments, with Manual recommendations)
Adjournment at 4:00 p.m. to visit A.R.A. laboratory

WEDNESDAY, MARCH 15

Morning Session—9:00 a.m.

Reports of Committees on

Maintenance of Way Work Equipment, R. K. Johnson, Chesapeake & Ohio, chairman (reports on nine of ten assignments, with Manual recommendations)
Economics of Railway Labor, H. E. Kirby, Chesapeake & Ohio, chairman (reports on five of eight assignments, with Manual recommendations)
Ties, B. D. Howe, Louisville & Nashville, chairman (reports on four of eight assignments)
Wood Preservation, G. B. Campbell, Missouri Pacific, chairman (reports on six of eleven assignments)

Roadway and Ballast, H. W. Legro, Boston & Maine (reports on two of ten assignments, with Manual recommendations)

Association Luncheon—12:00 o'clock

Address by W. G. Vollmer, president, Texas & Pacific

Afternoon Session—2:30 p.m.

Reports of Committees on
Yards and Terminals, W. H. Giles, Missouri Pacific, chairman (reports on six of ten assignments)
Rail, Ray McBrian, Denver & Rio Grande Western, chairman (reports on ten of eleven assignments)
Track, E. W. Caruthers, Pennsylvania, chairman (reports on seven of ten assignments, with Manual recommendations)

THURSDAY, MARCH 16

Morning Session—9:00 a.m.

Reports of Committees on

Wood Bridges and Trestles, C. V. Lund, Chicago, Milwaukee, St. Paul & Pacific, chairman (reports on five of seven assignments, with Manual recommendations)
Clearances, A. R. Harris, Chicago & North Western, chairman (reports on two of five assignments, with Manual recommendations)
Waterproofing, R. L. Mays, New York, Chicago & St. Louis, chairman (report on one of three assignments)

Impact and Bridge Stresses, J. P. Walton, Pennsylvania, chairman (reports on five of ten assignments)
Masonry, C. B. Porter, Chesapeake & Ohio, chairman (reports on three of eight assignments, with Manual recommendations)
Iron and Steel Structures, J. L. Beckel, New York Central, chairman (reports on three of nine assignments, with Manual recommendations)

Closing Business

RAILROADERS'

**"MAGIC CARPET" whisks 100 tons
of coal aboard every minute!**



NEW G-E EQUIPPED PIER HANDLES COAL FASTER, GENTLER!

1. A "magic carpet" of rubber 2 miles long, which gently whisks 6,000 tons of coal an hour from hopper cars to waiting ships, is the eye-opening feature of the new \$8,000,000 Chesapeake and Ohio Pier 14 at Newport News, Va. Four mobile towers move to any hatch open-

ing, so that further movement of ships, once they are berthed, is unnecessary. And for dependable power, Pier 14 relies completely on General Electric equipment, all the way from conveyor drives to yard lighting. Here's another example of broad scale G-E electrification at work.



2. The loaded coal hopper cars are fed by gravity from an 800-car storage yard, roll past the scale house where they are weighed while in motion, and coast down 2 "barney" hauls (above). A "barney" or "mule" pushes them up the incline to the car dumpers.



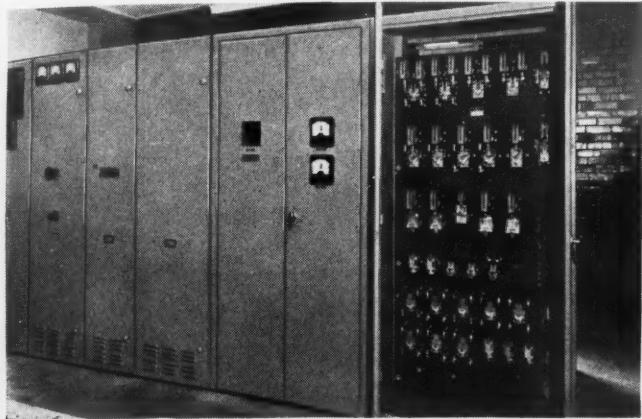
3. Each "barney"—a cable operated pushing unit—is powered by a G-E 4-unit motor-generator set (above) which in turn drives two 250-hp G-E motors. These motors are geared to the cable drum which is used to pull one or two loaded hoppers at a time up the incline.

GENERAL  ELECTRIC

152-9

DIGEST

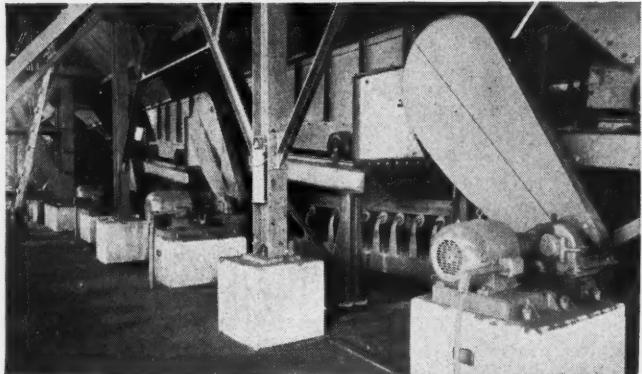
News and notes about
GENERAL ELECTRIC products
 for the railroad industry



4. G-E control equipment is used throughout the C&O's new pier. As illustrated by this metal clad control (above), these units are completely metal enclosed to protect personnel. They come in compact, assembled "packages"—all ready for installation.



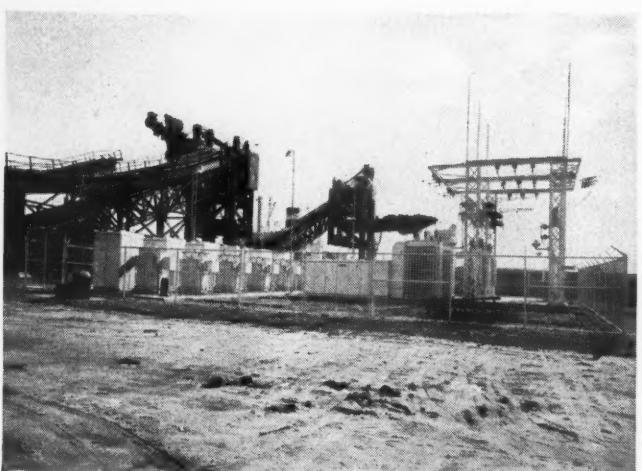
5. The cars are spotted on dumpers (above) which empty coal into the hoppers below. Equipped with 2 G-E 40-hp ac motors, G-E controls and limit switches, each of these rotary dumpers upturn a 70-ton car, empty it, right it again—all in 60 seconds.



6. The coal in the dumper hoppers is fed onto collecting belts, each of which is driven by a 50-hp totally enclosed, fan-cooled G-E Tri-Clad motor (above). These motors provide 3-way protection against physical damage, electrical breakdown, and operating wear and tear.



7. On each of 4 main conveyors, the coal is carried to a tower and loading boom where it is lowered into the hold of a ship. The drive for each main conveyor belt (above) is a 125-hp G-E Tri-Clad motor plus a 30-hp G-E Tri-Clad motor to reduce slack tension on the belts.



8. From this 22 KV G-E "package" substation (left) current is distributed to 6 G-E outdoor load-center unit-substations, and from there to various G-E Cabinetrol motor control units. Selective switching in the substation permits energizing one-half of the pier at a time or feeding both halves from one transformer bank in case of emergency.

Power is critical at Pier 14!

Excessive outages can't be tolerated. That's one reason why reliable G-E equipment was specified "down the line." Your road may never build a coal pier—but it will always be interested in getting electrical equipment it can count on, whether it be for keeping switches snow free or for running a diesel testing set. Why not take advantage of G-E experience in railroad electrification? Your nearest office will be glad to help. *Apparatus Department, General Electric Company, Schenectady 5, N. Y.*



Crawler-Mounted (Type 34)
Powered by one engine
Travel Speed 1 mph

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THE LIMA LINE INCLUDES:

Crawler-Mounted
Shovels, $\frac{3}{4}$ to 6 yds.
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Draglines, variable

Rubber-Mounted
Shovels, $\frac{3}{4}$ and $1\frac{1}{2}$ yds.
Cranes, to 35 tons
Draglines, variable

choice of **3** mountings



Truck-Mounted (Type 34-T)
Separate engine for travel
Travel Speed (maximum) 31 mph



Wheel-Mounted (Type 34-M and Type 604-M)
Powered by one engine
Type 34-M — Travel Speed (maximum) 8.24 mph
Type 604-M — Travel Speed (maximum) 5.27 mph

**for off-track work
with LIMA EXCAVATORS**

LIMA crawler, wheel or truck-mounted cranes offer a sure, fast and economical way to do your material handling work. Various lifting capacities, mountings and front-end equipment make them outstanding units for a wide variety of railroad uses. The wheel-mounted Types 34-M and 604-M are single-engine machines, especially adapted to localized yard work. For servicing widely separated areas, the truck-mounted Type 34-T (a two-engine unit) offers rapid mobility from one job to another. The Type 34 with crawler mounting serves as an efficient machine where speed of travel is not of prime importance. Keep your excavating and material-handling work moving fast with a LIMA. LIMA has been identified with the railroads for more than 80 years.



LIMA SHOVEL AND CRANE DIVISION

of the Lima-Hamilton Corporation

LIMA, OHIO

Exhibit Tu Print

New and Improved Products of the Manufacturers



The fastest available towing unit is recommended for the Hyster Grid Roller unless grades require the use of a crawler tractor

Hyster Grid Roller 1

The Hyster Company, Portland, Ore., has developed a new type of towed roller which is said to compact earth more firmly, with fewer passes and higher permissible operating speed, than the conventional sheepfoot or rubber-tired rollers. As its name implies, the rolling surface of this Grid Roller has the appearance of a woven, open-mesh grid, made by interlacing 1½-in. round bars.

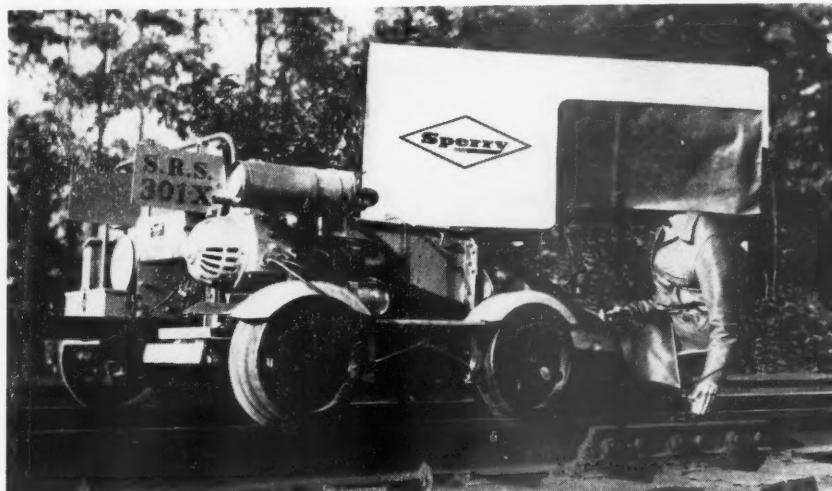
The roller as a whole consists of two rollers, each 5 ft. in diameter and 32 in. wide, and each made up of 10 replaceable heat-treated alloy steel grid segments bolted onto circular side plates. The openings between adjacent bars are 3½ in. sq. It is stated that, because of this design of grid surface, closely spaced, high-pressure points, surrounded by confined low-pressure areas, are produced, resulting in a high degree of compaction with minimum lateral shifting of the material.

Safety Welding Goggle 2

To its line of personal safety equipment, Willson Products, Inc., Reading, Pa., has added a welding goggle with nylon plastic cups which are said to impart more strength and less weight. Other features attributed to this goggle are rolled edges to reduce pressure around the eye sockets; adjustable leather bridge and headband to assure perfect fit; exclusive triangular lenses for extra-wide vision; and screened indirect ventilating ports which admit sufficient air to prevent fogging, but keep



out dust and flying particles. This goggle is also available with direct ventilating ports and clear, impact-resisting lenses for chipping and other heavy-duty work.



The Sperry ultrasonic detector car spotted at a joint while the operator scans the defect-indicating screen

Ultrasonic Inspection Service 3

Sperry Products, Inc., Danbury, Conn., has announced an ultrasonic detector car for locating rail defects, including bolt-hole cracks, and head and web separations within the limits of the joint bars. With this car defects are located by the transmission of intermittent ultrasonic vibrations from a searching unit into the rail. The vibrations travel in a beam through the rail when there is no dis-

continuity. An interruption, such as a bolt hole, bolt-hold crack, or other defects, reflects a portion of the ultrasonic beam back into the searching unit. These reflections are visually indicated on a screen so as to show the location of the defect and its size and type.

The ultrasonic car can also be used for detecting head and web separations in crossings and through station platforms, bolt-hole cracks in switch points and turnout rails, and defects in some type of welded joints.

Believe it or Not—

Despite the fact that diesel replacements during the past decade have decreased the demand for steam locomotive servicing facilities, Ogle's business has increased; in fact, Ogle has built more locomotive coal, ash and sand plants during this period than in any other like period of its thirty-nine-year career!

Surely this is an indication of Ogle's prestige as "LOCOMOTIVE SERVICE STATION SPECIALISTS," and we are pleased to note that this prestige is now . . .

OG

OGLE CONSTRUCTION CO.
175 West Jackson Blvd.
Chicago 4, Illinois

Light Crawler Crane 4

A crawler-mounted crane featuring a low overall height, a full-vision cab, a tapered counterweight, and a short tail swing, known as Unit 1020R, has been developed especially for railroad use. The treads of this machine are at narrow gage to permit it to work in gondola cars. Because safety is essential with railroads, the Unit Crane & Shovel Corp., Milwaukee, Wis., has incorporated, in addition to other safety measures, eight swing-limit stops in this unit to prevent it from fouling adjacent tracks or striking obstacles when working in confined quarters.

Unit 1020R is reported to be fast and easily controlled both in crane and exca-

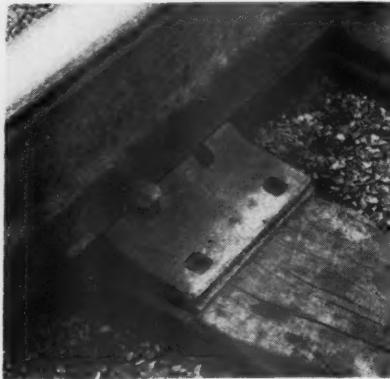


The Unit 1020R crane was designed especially for railroad use

vator operation. It is powered by a 68-hp., three-cylinder Diesel engine, and has a swing speed of 5 r.p.m. and a line speed of 155 ft. per min. A selection of booms and buckets is available for converting it from crane to clamshell, dragline, shovel or trencher. It will work a $\frac{5}{8}$ -yd. or $\frac{3}{4}$ -yd. bucket and will lift 5,600 lb. at a 30-ft. boom reach or 19,000 lb. at a 12-ft. boom reach.

Burkart Tie Pad 5

To protect crossties, switch ties and bridge ties from mechanical wear, the F. Burkart Manufacturing Company, St. Louis, Mo., has added a tie pad to its line of fiber products. The pad is com-



• • • being carried over into the diesel field, and has impelled many railroads to entrust to Ogle the design and construction of their diesel locomotive sand facilities - whether they involve only dry sand storage and delivery equipment for diesel switchers, or complete automatic plants to store wet sand, dry it and then dispense it to all boxes of any type of unit at one spotting.

LE

OGLE CONSTRUCTION CO.
175 West Jackson Blvd.
Chicago 4, Illinois

posed of a mat of wiry abaca fiber, loomed and tightly needled, impregnated with a special formulation of vinyl resins, and fused and compressed under great pressure. It is designed for insertion under the tie plates where it absorbs traffic shocks within itself, protecting the ties from mechanical wear. The pad is said to maintain its full bearing strength, to be unaltered by weather changes, and the binder is reported to retain its density and not squeeze out around the plate or up through the spike holes.

Nordberg to Offer Power Tie Sweeper

6

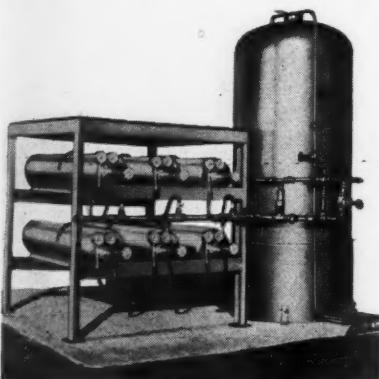
A machine for sweeping ties and lowering crib ballast ahead of adzers in rail-laying operations will soon be offered by the Nordberg Manufacturing Company, Milwaukee, Wis. The machine has a frame similar to that of the Nordberg adzer and employs a digging chain of the same general construction as that used on the Nordberg Cribex.

The digging chain is designed to remove high ballast from the cribs in such a way as to leave the top of the crib inclined downward toward the tie ends, thus providing drainage after the rail has been removed. As the digging chain removes the crib ballast a vertically mounted power-driven broom sweeps the adjacent ties. A feature of the machine is a special digging head which can be swung to permit removal of high ballast between slewed ties.

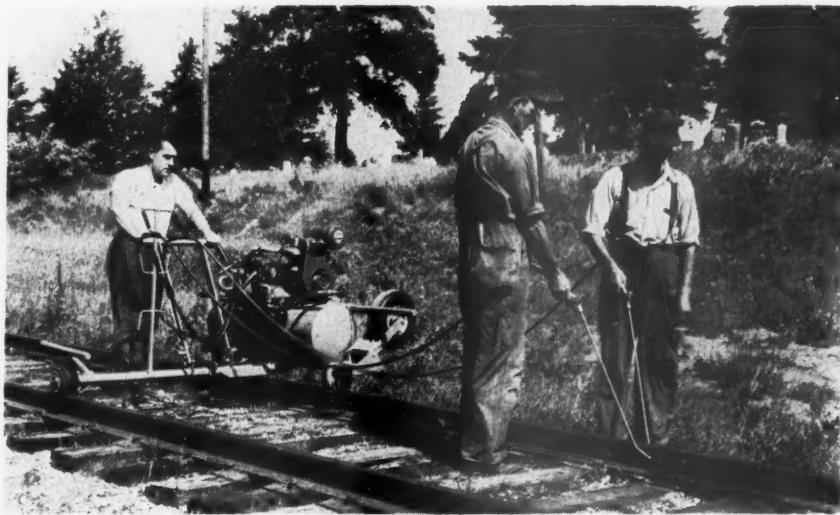
Fire-Fighting Units

7

Designed especially for use around railroad yards and other wide areas where little manpower is available, are the large stationary dry chemical fire-



The rate of flow of the dry chemical from the stationary unit is 450 lb. a minute



Oil is sprayed under pressure to all surfaces of the rail joint by the Fairmont W72 Series A oil sprayer

Fairmont Oil Sprayer

8

The application of heated oil to the undersurfaces as well as the exposed surfaces of joints, to prevent corrosion and eliminate frozen joints, is now a quick and relatively simple procedure with a new lightweight oil sprayer developed by Fairmont Railway Motors, Inc., Fairmont, Minn. This unit, the W72 Series A oil sprayer, includes a 30-gal. oil storage tank, a gasoline engine, and supports for three rail wheels which combine to form a frame.

The engine of this machine is single-cylinder and air-cooled, and drives a gear-type pump by means of a centrifugal clutch. The oil is heated by an exhaust heater and is pumped through two synthetic hoses, 15 ft. long, to metal spray nozzles, each equipped with a hand valve.

A suction line and a three-way valve enable the pump to draw liquid to fill the tank from drums placed along the track. The unit weighs 475 lb. and has two auxiliary pneumatic-tired wheels for easy removal from the track.

fighting units with capacities of 500 lb., 1,000 lb. and 2,000 lb., introduced by the Ansul Chemical Company, Marinette, Wis. Only one person is needed for their operation — an important advantage where only one employee, such as a night watchman, is available for duty.

The stationary unit consists of a centrally located steel tank containing a dry chemical, and a battery of nitrogen cylinders (the latter for pressurizing the tank). Piping runs underground from the tank to one or more hose houses, in each of which one-inch hose is coiled. The rate of flow of the dry chemical is 450 lb. a minute. Recoil, a problem with this high rate of discharge, has been minimized by a specially designed nozzle. The effective range of the hose discharge is about 35 ft.

Extension Spray Gun

9

Painters will no longer have to climb up and down scaffolds when painting high walls and ceilings if they use a new type extension spray gun recently made



One man can spray an area of 200 sq. ft. or more from one position with the extension spray gun

Exhibit 7a Print

available. The new spray gun is available in lengths of 4, 6, 8, 10 and 12 ft., so that a painter can stand on the floor or ground and spray coat a surface at second-story level. The new extension guns are light in weight—only 4 lb. for the 6-ft. extension gun. They are produced in three models, designated EX-T, TO, and AE-46, for accommodating any sprayable fluid from light paints to heavy asphaltic compounds, with control by separate shut-off cocks or four-finger trigger control. This series of extension spray guns is manufactured by the Eclipse Air Brush Company, Newark, N. J.

Safety Claw Bar

10

A new design, the Reade Safety Claw Bar, has been developed by the Reade Manufacturing Company, Jersey City, N. J. The advantages claimed for this claw bar, as compared with one of standard design, are ability to withdraw spikes without bending them, and greater safety in use. The safety features include a cover over the jaws of the tool to prevent flying particles of rust, scale, or broken heads from injuring the workman while the claw bar is being used. Two sets of jaws, set one over the other and covered by the protecting shield, are provided at the working end of the claw bar. In application, the lower jaws are first fitted to the head of the spike



Making the first pull on a spike, using the lower jaws of the Safety Claw Bar

and used to lift the spike about $2\frac{1}{2}$ in. The tool is then withdrawn and reapplied with the upper jaws used to lift the spike completely from the tie.

Lift-Equipped Truck For Road Maintenance

11

The versatility of the Dodge Power Wagon for railroad maintenance has been enhanced by mounting the Monroe Hydraulic Lift on the rear of the vehicle. The lift is produced by the Monroe

Equipment Company, Monroe, Mich., together with a line of tool attachments which adapt the truck for cutting weeds, digging post holes, grading and earth moving, weed spraying, constructing firebreaks and fighting fires. The attachments and the hydraulic lift are controlled by a lever in the driver's cab.

The Dodge Power Wagon has the power to do the work of a tractor, being built with a four-wheel drive, a 94-hp. engine, a four-speed transmission and a two-speed transfer case. When not in use with any of the Monroe attachments, the



Digging post holes with the Dodge Power Wagon equipped with Monroe Lift and digger

vehicle does the work of a conventional truck. It has an 8-ft. steel body constructed for a maximum payload of 3,000 lb. The Power Wagon also has a dual power take-off for operating a front-mounted winch or various auxiliary units of equipment and power tools.

Gravely Rotary Saw

13

The Gravely Motor Plow & Cultivator Co., Dunbar, W. Va., has added a Rotary Saw to its line of attachments de-



A Stefco Steel Building used as a Diesel locomotive repair shop for four locomotives at Muskegon, Mich.

Prefabricated Steel Diesel Shop Buildings

12

Several new designs of prefabricated steel buildings, said to be particularly applicable for Diesel locomotive repair and maintenance shops, have been announced by the Stefco Steel Company, Michigan City, Ind. The buildings are available in designs for housing one, two or four locomotives. While all dimensions can be varied to the customer's requirements, the usual designs

are 22 ft. wide, 70 ft. long and 20 ft. to eaves for single locomotives; either 22 ft. wide, 140 ft. long and 20 ft. to eaves, or 40 ft. wide, 70 ft. long and 20 ft. to eaves, for two locomotives; and 40 ft. wide, 140 ft. long and 20 ft. to eaves for four locomotives.

All of the buildings are equipped with 14-ft. wide and 16-ft. high electrically operated doors on either one or both ends of the buildings. Insulation is optional. A distinctive advantage claimed is speed of erection.



signed for use with its 5-hp. Gravely tractor. The Rotary Saw is designed for clearing land of brush, saplings, and trees up to 18 in. in diameter, as well as for cutting fallen timber. The blade can be turned by a bolt-secured locking mechanism from a horizontal to a vertical position.

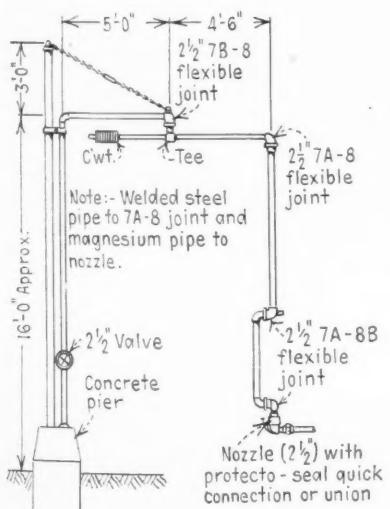
The blade is gear-driven from the tractor engine but is operated independently of the wheels. It is 26 in. in diameter and is made from Grade A file-temper steel for easy sharpening in the field. A clutch prevents damage to the blade and tractor if obstacles are encountered or if the blade is pinched by the timber.

Nonflammable Chlorate Weed Killer 14

The Pacific Coast Borax Company, Los Angeles, Cal., is introducing a weed-control chemical consisting of a mixture of borates and chlorates, in which the fire hazard due to its chlorate content is said to have been eliminated. Known as Polybor-Chlorate, the product is water soluble and can be applied either dry or by spraying with any type of spray equipment.

Fueling Apparatus 15

The Barco Manufacturing Company, Chicago, has devised a Diesel fueling crane which employs an arrangement of Barco flexible joints and pipe for delivering oil to locomotives, entirely eliminating hose. With this arrangement, said to be light in weight, well balanced, compact when not in use, and permanent, the fueling connections may



be swung to either side to reach fuel inlets of locomotives on two tracks. They hang between tracks when not in use.

Armco Snow Fence

An all-metal snow fence which is fire-proof, easy to erect, adequate to resist pressures of wind, snow and livestock, and is expected to have a long service life, has been developed by Armco Drainage & Metal Products, Inc., Middlebury, Ohio. The fence is erected in

sections, each of which consists of rails 13 ft. 6 in. long bolted in a horizontal position to two triangular frames spaced 8 ft. apart. The rails are made of No. 26 gage Armco Zincgrip steel, and the frames of Armco Zincgrip channels and angles. The frames are so constructed that the fence sections can be folded flat and stacked, if desired.



The apparatus is comprised of welded steel pipe and fittings, magnesium-alloy pipe, flexible joints and a quick-connection fitting, and is balanced by an iron counterweight. Other arrangements, using similar materials, have been worked out by Barco for unloading tank cars through the dome and from the bottom.



P&H Zip-Lift Hoists 17

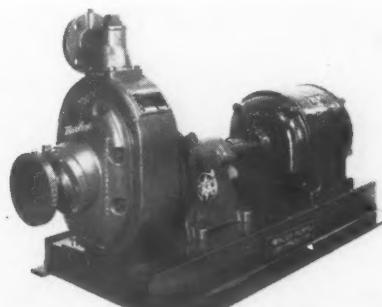
Harnischfeger Corporation, Milwaukee, Wis., has announced that it has added new features to every model of its 1950 line of P&H Zip-Lift electric hoists. These improvements include: A greater

measure of safety provided by the use of a magnetic lower-limit switch; a cable that cannot run off its drum and rewind itself; an extra ground conductor on the feeder cable which makes a short in the circuit impossible; and grooved drums that contribute to longer cable life.

The new Zip-Lift models also have a reinforced push-button pendant. This extra protection is provided for those cases in which operators move heavy loads along jibs and trolleys by pulling the push-button cable.

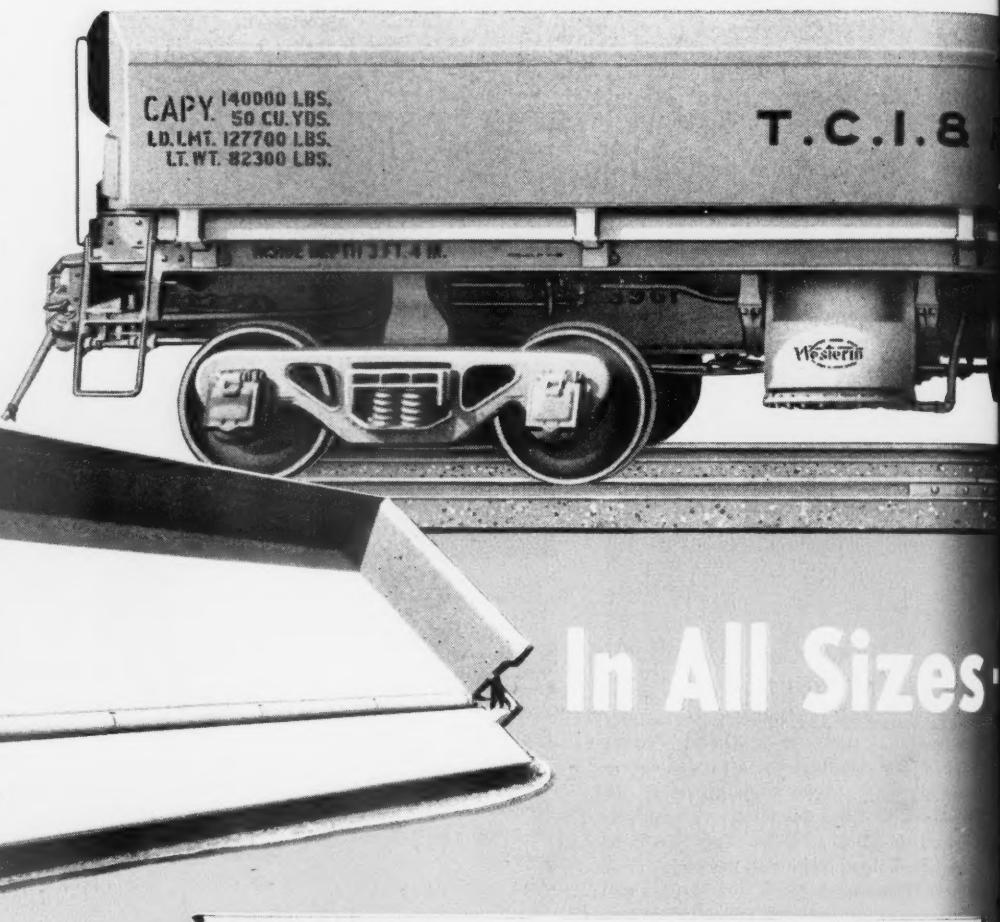
Pump Improvements 18

Several important improvements were recently announced by Marlow Pumps, Ridgewood, N. J., in its line of self-priming centrifugal pumps as used in railroad Diesel fueling and water service. The front cover has been strengthened, the check valve has been re-de-



Western

50 cu. yd. level-full, 140,000 lb. capacity, dual side pivot, drop door, automatic air dump car. These cars are built in capacities up to 60 cu. yds. and 100 tons with plain or anti-friction truck bearings. Low height, low center of gravity, and stability in traveling and dumping are built into every "Western" car.

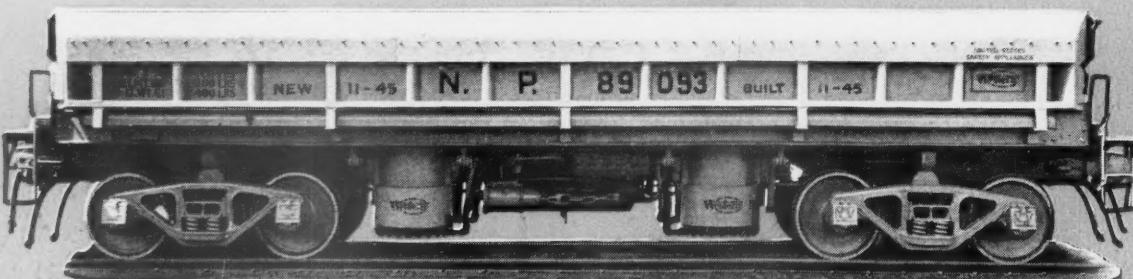


Drop door in dumped position protects track and ballast from backfill. Steep dumping angle of 50 degrees provides unlimited clearance for the unloading of the largest chunks of material, which are deposited in the clear a maximum distance out from the rail.

In All Sizes



20 cu. yd. level-full, 80,000 lb. capacity, dual side pivot, drop door, automatic air dump car designed to accommodate the reach and loading ability of modern ditching equipment.



30 cu. yd. level-full, 100,000 lb. capacity, standard, heavy-duty, railroad-type, dual side pivot, drop door, automatic air dump car. Car bed rests directly on rubber shock-absorbing cushion pads, which in turn rest on top of underframe.

S

atic
lem



DUMP CARS



For All Types of Railroad Service

The cars shown on these pages are typical examples of "Western" dump cars built for railway service. "Western" railroad-type dump cars are available in all sizes and for all kinds of railway maintenance and construction work. Careful adherence to I.C.C. and A.A.R. regulations insure their universal acceptance for interchange service under load. These cars can be dumped, independently or in combination, quickly and easily while standing or moving

slowly ahead.

Streamlined strength is built into every "Western" car through careful construction plus the best and most modern of materials. Dead-weight is kept at a minimum by the use of high-tensile alloys. Remember — whatever the problem — if it calls for air dump cars — there's a "Western" car to meet it.

Recent purchasers are shown in the following list.

CHICAGO, MILWAUKEE, ST. PAUL AND PACIFIC R. R.
COLORADO & WYOMING RAILWAY COMPANY
MAINE CENTRAL RAILROAD

SPOKANE, PORTLAND AND SEATTLE RAILWAY SYSTEM
CHICAGO, BURLINGTON & QUINCY RAILROAD
NORFOLK & WESTERN RAILWAY ATLANTIC COAST LINE THE ALASKA RAILROAD
ILLINOIS CENTRAL RAILROAD

World's Largest Manufacturer of Dump and Trail-Cars

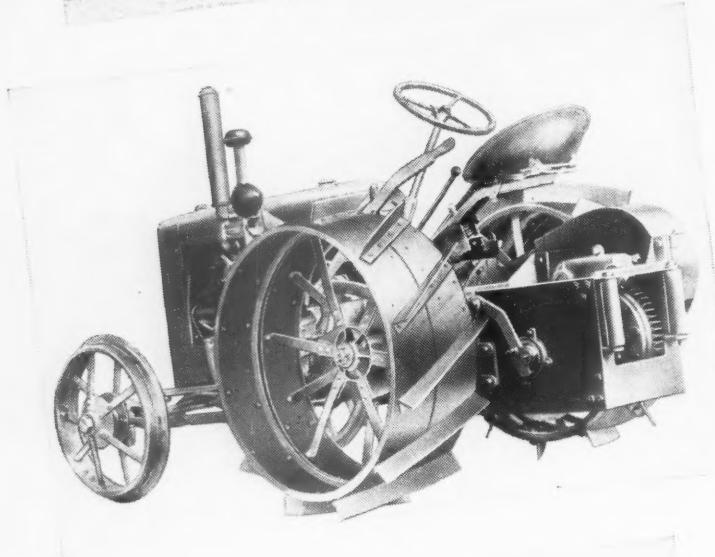
AUSTIN-WESTERN COMPANY

(Formerly the Western Wheeled Scraper Company)

AURORA, ILLINOIS • CABLE ADDRESS: AWCO, AURORA

Austin-Western also builds Power Graders, Rollers, Shovels and Cranes, Street Sweepers and a complete line of Rock Crushing and Screening Plants and kindred equipment.

THE WINCH OF 100 USES



**the winch with
two speeds
built into
the drum!**

Ideal for such diverse applications as independent lines on wreckers to pulling piles from harbors and rivers.

Can be applied to wheeled tractors, crawler tractors, trucks, cranes, power shovels and other work equipment. Available, also, as a self-powered, skid-mounted unit.

Weighs less than 1000 pounds installed, can pull up to 65,000 pounds. Has drum capacity for 400 feet of $\frac{3}{4}$ -inch wire rope.

* * *

For additional information on the Balmar Winch,
write Franklin Railway Supply Company,
60 East 42nd Street, New York 17, N. Y.



FRANKLIN RAILWAY SUPPLY COMPANY

A CORPORATION

NEW YORK • CHICAGO • TULSA • MONTREAL

STEAM DISTRIBUTION SYSTEM • BOOSTER • RADIAL BUFFER • COMPENSATOR AND SNUBBER • POWER REVERSE GEARS
FIRE DOORS • DRIVING BOX LUBRICATORS • OVERFIRE JETS • JOURNAL BOXES • FLEXIBLE JOINTS • TANK-CAR VALVE

RAILWAY DISTRIBUTOR FOR N.A. STRAND FLEXIBLE SHAFT EQUIPMENT

Model P-44 Grinder

19

A walk-off "wheelbarrow" grinding machine with a flexible shaft is now offered by Railway Track-work Company, Philadelphia, Pa., for one-man operation where portability on and off the track is especially desirable. It is powered by a 6-hp. gasoline engine swivel-mounted for 360-deg. rotation to eliminate

the possibility of short bends or kinking of the flexible shaft while in use. It is also equipped with a locking device to prevent the power unit from swiveling during movement of the machine. The flexible shaft is powered by a clutch assembly which acts automatically as an overload release to protect the shaft in emergencies.



The mounting of Railway Track-work P-44 flexible-shaft grinder is adjustable to three up-and-down positions to facilitate the removal of the machine and its replacement on the track

signed to provide greater resistance against leakage, the suction inlet has been lowered to obtain a smoother fluid flow, flanged fittings have been made available in the pumps of 2-in. and 3-in. sizes, and a new shaft seal has been introduced. The shaft seal, designed to prevent leakage between the rotating pump shaft and the stationary pump casing, is made in two types; the self-lubricating seal for clear liquids and petroleum products, and the grease-lubricated seal for fluids containing abrasive solids.

Scotchlite Lettering Film

20

A new lettering material—a film—said to have an outside durability of from five to eight years, is now being made for railroad signs and rolling equipment by the Minnesota Mining & Manufacturing Co., St. Paul, Minn. Trademarked "Scotchlite," it is produced both in roll form and in made-to-order letters and numerals. It is available in yellow, white and black non-reflective colors so that letters in any of the three colors will stand out at night in contrast to the bright background of a reflective sheeting.

It is said that the application of this lettering material requires little time, expense and skill because it is an ad-



hesive-coated film that is applied by "squeegeing" a special solvent over the adhesive side and then pressing the film in place with a 2-in. roller.

Reade Track Liner

21

An improved model of the Reade Track Liner is now being produced by the Reade Manufacturing Company, Jersey City, N. J. It is said that this device can be used to shift track horizontally without causing it to "hump," and that its lateral thrust is equivalent to that of seven men with lining bars. The liner weighs about 37 lb. and consists of a



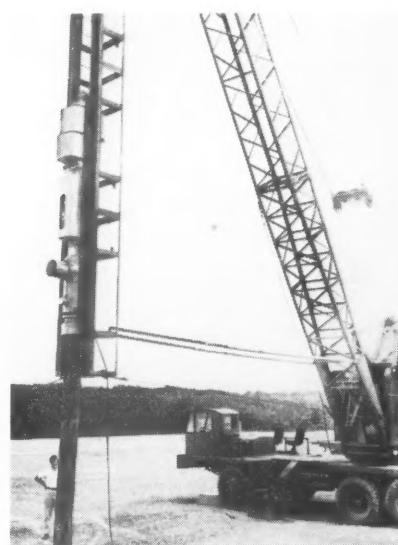
steel housing which encloses a thrusting rack, a pawl-and-rack mechanism, and a socket lever. A fin plate extends downward beneath the housing to provide anchorage in the ballast. A foot-trip lever and spring are provided to disengage the mechanism and withdraw the rack. The device is operated by a standard lining bar inserted in the socket lever, and provides a throw of as much as 5½ in.

The latest improvements are a ½-in. lengthening of the lower lip on the head of the rack so that it will engage the rail base even if used at a joint, and changing the trip lever from the side to the top rear of the housing, where it is actuated by the operator stepping on the handle.

Diesel Pile Hammer

22

The Syntron Company, Homer City, Pa., has built an entirely self-contained pile hammer for the U. S. Navy which operates on Diesel oil from a fuel tank



(Official U. S. Navy photograph)



**"That was an
expensive saving,
wasn't it?"**

"What do you mean?"

"When that car was re-decked five years ago, we omitted pressure-treatment from the specifications because we didn't think we could afford the forty dollars that pressure-treatment would have cost."

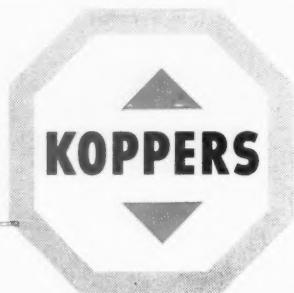
"Well, we had to keep maintenance costs down."

"That's just the point . . . we don't keep maintenance costs down when we go in for expensive economies. But, can we afford *not* to invest forty dollars more in pressure-treatment with a life expectancy of three or four times what we're getting

now with untreated lumber? Now we have to pay for another re-decking job that pressure-treatment would have eliminated by giving us ten more years of service. That would have paid for the forty dollars a number of times over."

"That looks like sound logic to me. We'll have to stop thinking of pressure-treatment as a cost . . . it's really an investment that pays worth-while dividends."

Why not let us give you . . . without obligation . . . an analysis and report on what these savings, through pressure-treatment, can be for your railroad? Your inquiry will receive prompt attention.



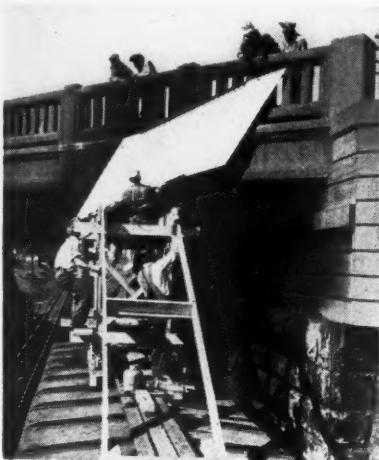
PRESSURE-TREATED WOOD

KOPPERS COMPANY, INC., Pittsburgh 19, Pa.

mounted on the hammer. Called the Syntron Diesel pile hammer, it is made up of a cylinder, piston or ram, fuel tank, fuel pump and injectors, mechanical lubricator, and lubricant tank. It fits in standard 20 $\frac{1}{2}$ -in. leads and requires one line for lifting the hammer and another for both lifting the pile and starting the hammer by lifting the piston. The force of each blow is controlled remotely by the operator on the ground by a hydraulic fuel-pump control system, and it is said that the power per blow can be regulated from zero up to the full maximum of 16,000 ft.-lb.

Aluminum Blast Plates 23

The Aluminum Company of America, Pittsburgh, Pa., announces that its Alcoa aluminum alloy 61S-T6 is highly desirable for use as blast plates in the protection of exposed steel under bridges, and will give a service life of as much as 75 years. Such durability, it is pointed out, eliminates labor costs for maintenance and replacement. In addition, the aluminum sheets are said to weigh only one-quarter as much as conventional metal plates, thereby facilitating their handling and installation.



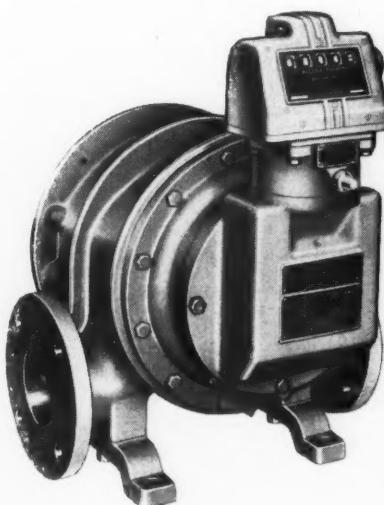
An end section of aluminum alloy blast plate being lowered for installation under a highway bridge near Toledo, Ohio

Bowser Rotary Meter 24

Bowser, Inc., Fort Wayne, Ind., has announced development of an entirely new 350-gal.-per-min. Rotorol meter, light in weight and compact in size, for use at Diesel fueling platforms and for other liquid-measuring jobs. Features of the construction are stainless steel ball bearings and needle-type roller bearings on the rotor and cam shafts, which are said to provide running action so free as to

offer practically no resistance to liquid flow. Rust and corrosion resistance are imparted to the interior rotating parts by the use of aluminum and cadmium-plated steel. Positive displacement meas-

conveyor system to waste this debris to one side or load it into cars for disposal. Details concerning the operation of this machine on the Elgin, Joliet & Eastern in 1949, and the results obtained, are given in the March issue of *Railway Engineering and Maintenance*.



urement is accomplished in a precision chamber during each quarter revolution of the rotor. A simple gear change permits flow through the meter in either direction. The meter is available with ticket printer or with large-numeral straight reading dial which can be set to face in any of eight directions.

Yard Cleaner 25

The Nordberg Manufacturing Company, Milwaukee, Wis., has announced that it has taken over the manufacture of a track-cleaning machine developed by three maintenance men of the Elgin, Joliet & Eastern. Called the DSL Yard Cleaner, the machine employs a unique impeller to clean debris from the ties between the track rails and a



The manufacture of this track cleaning machine has been taken over by Nordberg

Controlled Power Chipping Hammers 26

A new line of chipping hammers has been introduced, which incorporates a number of unusual features. Among these is a special valve to control the amount of air fed to the front and rear of the piston, which is said to maintain top cutting efficiency under all of the cutting conditions imposed by present-day metals. Also, a hard-surfacing process, known as the Iramet process, has been used to plate important parts of the hammer that are subject to wear. This is expected to increase piston life more than twelve times. Other features include good weight distribution, comfortable handles, and a design which is said to result in easier operation and reduced operator fatigue.

This new line, known as Controlled



Power chipping hammers, is manufactured by the Ingersoll-Rand Company, New York, and includes a selection of 15 power sizes to meet job requirements. Also, it is available in five basic hammer sizes, each of which can be procured in normal-cut, extra-cut, or super-cut types with interchangeable parts.

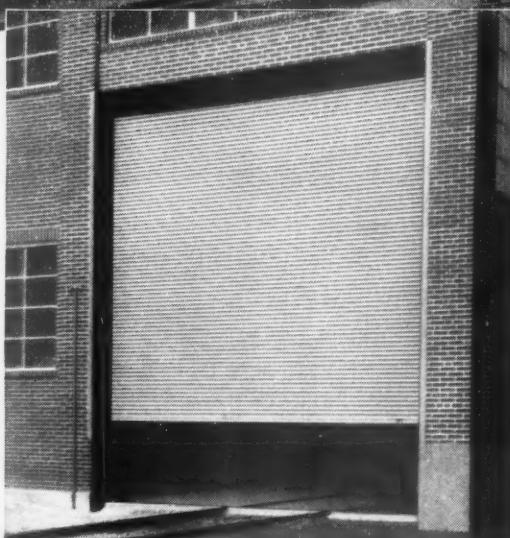
Diesel Sand Valve 27

The W-M Corporation, Chicago, has announced a new weatherproof valve for controlling delivery of sand to Diesel locomotives. Constructed entirely of



Above: New Diesel Locomotive Maintenance Shop, Lake Terminal Railroad Company, Lorain, Ohio.

Their
rugged,
durable
dependability
means



Highest Efficiency at Lowest Cost

These famous doors make all *floor, wall and ceiling* space around doorways *fully usable at all times*. They need no overhead storage space to open into. Freight, shop materials, or equipment can be placed within an inch or two of the door curtain, inside or outside, without blocking its smooth, easy *coiling upward action*.

But space-saving efficiency is only one of many reasons why Kinnear Rolling Doors are so widely preferred for railroad buildings of every type. The Kinnear-originated interlocking steel slat construction has proved its extra value and long-run economy in many other ways.

Coiling completely out of the way above the lintel when opened, Kinnear Rolling Doors stay out of reach of damage by wind or vehicles. Their rugged, all-metal construction assures long service and low maintenance—plus an extra measure of protection against theft, intrusion, fire, wind, and weather.

Kinnear Rolling Doors are "tailored" to each individual opening. They may be equipped with Kinnear Motor Operators, controlled from pushbutton switches, placed at any number of convenient points in the building or yard, or at other remote points. Write for complete information.

THE KINNEAR MANUFACTURING COMPANY

2020-40 Fields Ave., Columbus 16, Ohio

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Offices and Agents in All Principal Cities

Saving Ways in Doorways
KINNEAR
ROLLING DOORS



stainless steel, the sand valve is rugged but light (weight 5 lb.), and contains no springs, levers or weights.

The unit consists of a pipe sleeve that fits into any size delivery hose; a tubular valve body fastened to the lower end of the sleeve and slightly larger than it is in diameter; a valve seat that fits into the valve body and is held in place by an annular ring that screws into the bottom of the valve body; and a 2 1/4-in. rubber-ball valve to which is attached an inverted T-shaped operating rod.

The valve is actuated by merely resting the inverted "T" against the screen or sides of a locomotive sand box. It closes automatically when it is lifted. Valve travel is limited by the "T" striking the bottom of the valve seat sleeve that extends slightly below the lower end of the valve body.

The designers assert that the "weather drip" construction of the bottom of the valve body and valve seat make the valve incapable of becoming frozen or adversely affected by humidity, rain, sleet or snow.

Thor Impact Wrench

28

The Independent Pneumatic Tool Company, Aurora, Ill., has announced a new Thor 3/8-in. universal electric impact wrench featuring positive drive, high



torque, negligible torque reaction, smooth operation, simplicity, compact design, low maintenance costs, and long life. The wrench has a highly polished, mirror-like die-casting case; a free speed, forward or reverse, of 2,150 r.p.m.; strikes 2,000 blows per minute; operates on either alternating or direct current; employs a $\frac{1}{2}$ -in. square spindle drive with a 17/16-in. spindle offset, and weighs only 6 lb. 14 oz.

**Scoop Shovel
For Fork Trucks**

29

A hydraulically operated scoop-shovel attachment has been added by the Yale & Towne Manufacturing Company, Philadelphia (Pa.) Division, to its line of interchangeable devices to be fitted to fork trucks. The scoop handles up to 27 cu. ft. of material. The device scoops at



ground level or dips into piled material, whereupon it tilts upward from the horizontal position to cradle the load during transport. It tilts downward to discharge the load when dumping into bins, vats, hoppers, mixers, and other receptacles at heights up to 130 in. The scoop-shovel is designed to scoop up a full load and to carry it without loss in transfer.

**Ballast Plow
And Distributor**

30

An improved model of its ballast plow and distributor has been announced by the Kershaw Manufacturing Company, Montgomery, Ala. This unit is designed for removing excess center-unloaded ballast from between the rails, pulling shoulder-unloaded ballast into the center of the track, and regulating ballast depth uniformly as desired.

The unit consists of a V-type plow suspended from a carrying frame with four flanged wheels. The plow is equipped with two sets of blades -- one on

**New Jordan Spreader
Can Handle More Snow** 31

The O. F. Jordan Company, East Chicago, Ind., has improved the snow-fighting qualities of the Jordan Spreader-

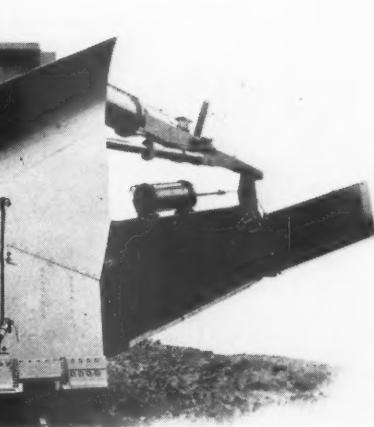
the outside of the V-section is used for plowing ballast from between the rails when the unit is operating in the forward



direction; the other set on the inside of the V-section is used to pull ballast into the center of the track when the unit is operated in the reverse direction. The up-and-down motion of the plow is controlled by hand hoists. When in operation the unit is propelled by a heavy-duty motor car.

**Borascu Available
In 3 Different Forms** 32

The Pacific Coast Borax Company, Los Angeles, Cal., has announced that, in addition to Regular Borascu, two new forms of this chemical are now available--Concentrated Borascu and Borascu 44. Borascu is a nonselective weed killer for use in the vicinity of bridges, buildings, pole lines, switches and other areas where destruction of

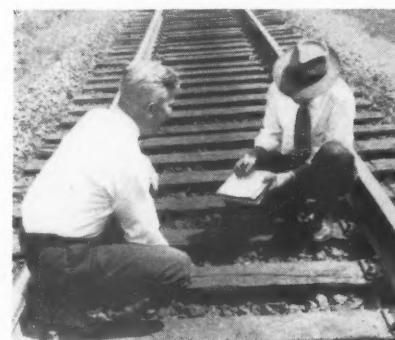


Ditcher-Snow Plow, Model 2-200. The vertical travel of the outer ends of the wings of the unit has been increased for better plowing of snow in narrow cuts. The front plow of this machine will handle snow as deep as 8 to 10 ft.

all types of vegetation is desirable. The new concentrated forms are designed to reduce storage and handling charges. All three forms of the weed killer are reported to be nontoxic, noncorrosive to ferrous metals, and nonflammable.

**Sealing Compound
Checks Tie Weathering** 33

After two years of good performance under field test conditions, Koppers Company, Pittsburgh, Pa., has announced the development of a tie-sealing compound by the Tar Products Technical Section and the Wood Preserving Division for the protection of the exposed



Crossties treated with Koppers Compound No. 16, in a two years' test, have resisted severe weathering

surfaces of ties from weathering, thereby extending their service life.

The product, designated Compound

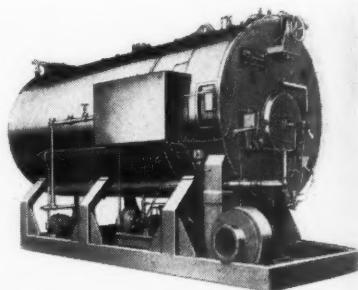
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No. 16, is best applied at air temperature by spraying, and is said to adhere well even to creosoted ties, flowing easily into checks and splits. It may also be applied by daubing, "squeegeeing," or brushing to make certain that it adequately seals around the tie plates. A $\frac{1}{4}$ -in aggregate coating is recommended for protecting the sealing compound and the ties from direct contact with hot cinders. One gallon of Compound No. 16

is said to coat about 3.6 ties, depending upon the size of the checks and splits in the wood.

Amesteam Generator 34

Railroad Supply & Equipment, Inc., Scranton, Pa., has introduced into the railway field the Amesteam generator—



AMESTEAM GENERATOR
"The Railroad Boiler"
PRODUCT OF AMES IRON WORKS
OSWEGO, N.Y.

OVER
3700
In Use

Here's Why

80% Thermal Efficiency
100% automatic
Abolishes boiler room labor
Uses oil or gas fuel or a combination of both
No smoke—no soot
Takes up 1/3 the space of conventional boilers
Suitable for multiple installations
Delivered complete ready for service connections

NO BOILER ROOM LABOR REQUIRED

Exclusive Distributors to the Railroads
Engineering, Sales and Service

RAILROAD SUPPLY and EQUIPMENT Inc.
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Thousands of installations testify to the savings afforded by the AMESTEAM GENERATOR. This modern boiler is produced by the Ames Iron Works, builders of quality boilers for more than 100 years. Trouble-free—100% automatic in operation, the AMESTEAM GENERATOR requires no chimney draft, only a simple vent to the atmosphere. This rugged unit provides the fuel-saving advantages of a thermal efficiency of over 80%.

Ideal for low-pressure heat in station or shop, also for high-pressure work for sand drying, Diesel de-icing and a host of other railroad applications.

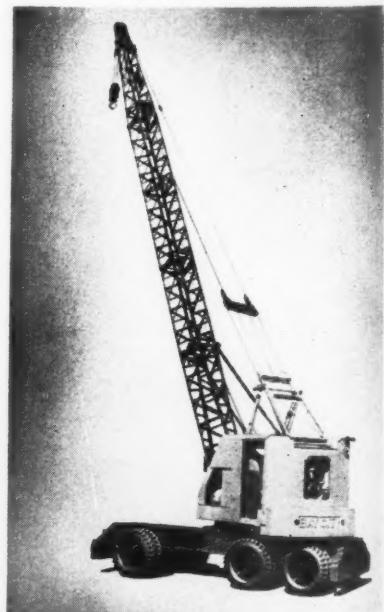
Single units from 10 to 500 H.P. Suitable for multiple installations. Design pressure—15 to 200 lbs. Higher pressures on order.

Delivered complete ready for service connections—including insulation and jacket. Phone, write or wire.

an oil- or gas-fired, fully automatic steam-producing unit which is said to require no boiler-room labor, to need no chimney draft (only a simple vent to the atmosphere), and to produce no smoke or soot. Available in capacities from 10 hp. to 500 hp., the Amesteam generator has a wide variety of railroad applications, such as heating stations, shops and other buildings, sand drying, Diesel deicing, and many others. It is manufactured by the Ames Iron Works, Oswego, N. Y., and is guaranteed to have a thermal efficiency of more than 80 per cent. Railroad Supply & Equipment, Inc., the exclusive distributor in the railroad field, is also a servicing organization.

Two Mobile Cranes 35

Model 190 CraneMobile and Model 190-CW CraneWagon are two new self-propelled, pneumatic-tired units added by Bay City Shovels, Inc., Bay City, Mich., to its line of mobile cranes. These new models have a 25-ton capacity and are



Bay City's CraneWagon 190-CW is a self-propelled vehicle with four speeds in either direction

intended for use in handling heavy loads with a long reach. Both machines have the same hoisting machinery powered by a 81-hp. gasoline engine, and full-revolving table.

CraneMobile Model 190 has a structural steel frame mounted on three axles, six wheels and 10 heavy-duty tires. The truck is powered by a separate 185-hp. truck-type gasoline engine and, through a variable-speed transmission, has speeds from 2 to 35 m.p.h.

CraneWagon Model 190-CW is mounted on three axles, six wheels and 12 heavy-duty tires. It is moved by an air compressor and hydraulic pump driven by the engine powering the hoisting machinery.

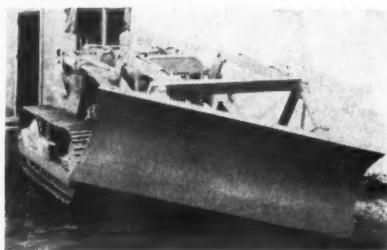
Highway Rotary Plow Takes to the Rails 36

A truck-type rotary snow plow with a special wheel mounting that permits it to be operated on the rails as well as over the highways is being offered by the Wm. Bros. Boiler & Manufacturing Co., Minneapolis, Minn. The basic unit is the company's truck-mounted "Sno-Fly" rotary plow, which has been con-

snow 300 ft. This plow is capable of operating at a speed of 40 m.p.h. on the track, and it is said that it will pass through drifts 4 to 5 ft. deep at a speed of 6 m.p.h. It is claimed to be effective for operation in drifts up to 12 to 15 ft. in depth.

to a position 30 in. lower than the trailing corner or heel. This permits use of the unit for cutting ditches or shaping ground to a slope.

The dozer can also be set at an angle of 65 deg. to the right or to the left, or it can be used as a straight blade. It is readily interchangeable with the bucket, and it is said that the change can be made in a few minutes.



The Allis-Chalmers HD-5G Tracto-Shovel equipped with a Tractomotive Model TS-5 Angledozer

New Accessory for Tracto-Shovel 37

A new accessory—the Tractomotive Model TS-5 Angledozer—is now being offered by the Allis-Chalmers Manufacturing Company, Milwaukee, Wis., for application to its HD-5G Tracto-Shovel unit. The dozer is attached to the dump cylinder of the machine so the operator, using the dump-cylinder control lever, can tilt the leading corner of the blade

Automatic Switching For Car Retarder Yards 39

Automatic switching is a control system developed by the General Railway Signal Company by which routing a car from a yard hump to any desired classification track is accomplished merely by pushing a button corresponding with that track. The new type control panel, installed at the hump, contains a push button for each track in the yard. As a car is uncoupled, the appropriate button is pressed for the track to which the car is to be switched. Thereafter, switch throwing for the route of the car is entirely automatic—the switches line up ahead of the car as it travels along.

Pushing the button originates an electric code impulse which defines the position of all the switches the car will encounter in its route, that is, whether they should be normal or reverse. This code goes to the first switch over which the car must travel. The switch is set nor-



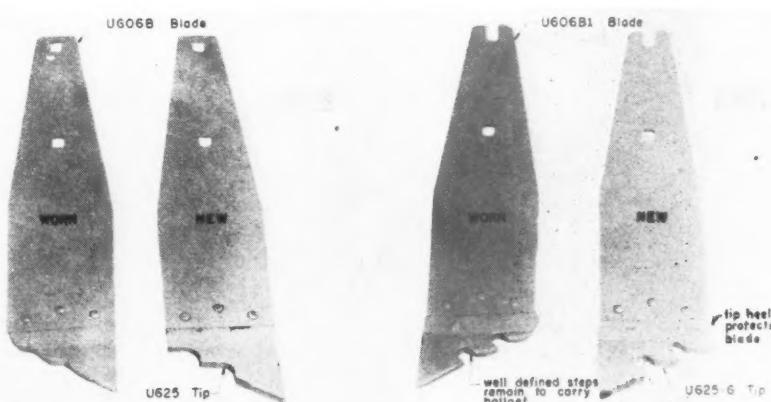
verted for railroad operation by fitting it with a specially designed mold board and by adding flat-rim steel wheels for operation on the rails and flanged pilot wheels for guiding the unit when it is operating on the track.

The pilot wheels are hydraulically operated to raise into the clear when not in use. In preparing the machine for track operation the pneumatic tires are deflated so it can operate through switches and over railroad crossings without difficulty. To reconvert the machine for highway travel the tires are reinflated by an air compressor mounted on the truck.

A regular feature of this plow is a revolving telescoping chute which can be used either to cast the snow into the clear or to load it into trucks or cars on adjacent tracks. For operation in yards the loading chute may be replaced by a long-distance chute capable of casting

of a hole, so that to replace this blade it is necessary only to remove the lower bolt and slip the blade into place between the reinforcing plates.

Another improvement incorporated in the new blade is a redesign of the contour of the tamping tip, whereby well-defined steps are retained even after considerable wear, thus increasing tamping efficiency.



The new U606 B-1 blade (right) has a slot at its top which facilitates replacement, and a redesigned step-cut of its tamping tip. Old blade at the left

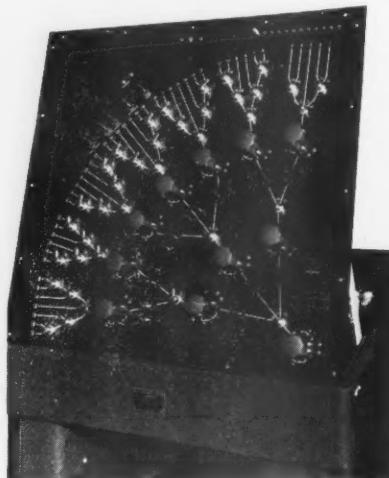
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All switches leading to a particular track in the classification yard are aligned simply by pushing the proper button on this control panel at the hump.

mal or reverse, automatically, as the route may require. The code, however, is held at the switch until the car arrives. The passing of the car at that point advances the code to the next switch over which the car must travel. That switch in turn is operated in accordance with the code. Again the car

arrives and transfers the code to operate the next switch, and so on until the designated classification track is reached. This new system also includes a new and simplified type of retarder control



In the control machine for the car retarders the yard is laid out in miniature on the panel (shown here in the raised position to give a better view)

machine, with which it is possible for all retarders in a yard of an ordinary size to be controlled from one machine in a tower which is elevated and at a location to afford the towerman a good view of operation of the retarders. This retarder control machine includes a diagrammatic plan of the track arrangement with knobs which actuate rotary switches, each of which controls a group of retarders. Graduations on the dials indicate the degree of retardation available for empty, light-weight or heavy-loaded cars.

The towerman controls each retarder to a position which he estimates will be satisfactory for an approaching car or cut of cars. If the speed of the car is being reduced too much, or not enough, the towerman can control the retarder to secure more or less retardation as required. A quick release to open the retarder can be effected by touching a key switch adjacent to the control knob.

The panel of the retarder control machine also includes small rotary levers for the control of the yard switch machines, this type of control being used when making trimming moves or other special switching operations.

SCRAP YOUR OLD TIME CLAW BARS



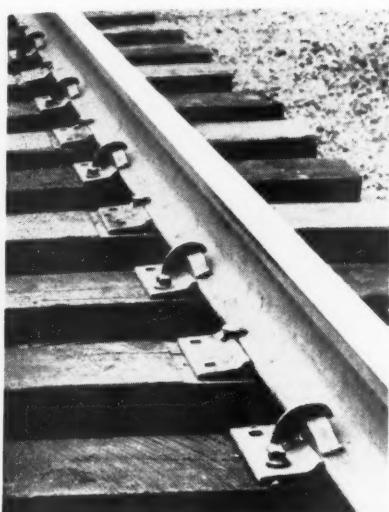
The READE SAFETY CLAW BAR is a great improvement on the standard claw bar. It has been designed to protect the workers against injury, to reduce track labor costs, and to eliminate the practice of straightening BENT spikes.

The high cost of reclaiming damaged spikes is usually overlooked in making up cost records. Such costs may be completely eliminated and spikes may be put back into service when the READE SAFETY CLAW BAR is in use.

Men using the READE SAFETY CLAW BAR are not subject to the "bending over" which causes back strains and injuries in using the standard claw bars. The safety shield of the READE SAFETY CLAW BAR protector over the toe, safeguards workers against broken spike heads, rust or scale.

Write for full details
on this new tool.

READE
EST. 1883
Executive Headquarters
135 Hoboken Avenue
Jersey City 2, N. J.



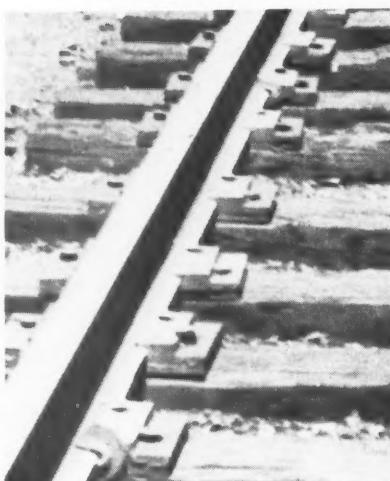
Rail Anchor Improved 40

Springs for the No-Creep rail anchor are now being produced with a greater thickness and a change in forging, and of a better grade of steel, according to the manufacturer, G & H Rail Controls, Inc., Kansas City, Mo. The thickness of

the springs, now made of spring steel S.A.E. 1095, was increased 1/32 in. to combat erosion and salt-brine corrosion. Also, the forged depression in the central part of the spring was reduced 1/16 in. in depth, as it was found that the smaller depression would keep the spring in place. The new spring is said to deliver approximately double the compressive force of the old spring, or about 4,000 lb. between the base of rail and the tie plate.

**Rubber Rail Seats
And Insulated Joints 41**

A special tie-plate assembly and insulation for insulated joints, involving the use of molded rubber, are now being offered by Railroad Rubber Products, Inc., Ashtabula, Ohio, for reducing track maintenance. The tie-plate assembly embodies a double-shoulder steel tie plate and a rubber rail seat pad. The pad is formed to fit the rail section with which it is used and is inserted between the plate and the rail base. Holes are provided in both the pad and the



Rubber rail seats, inserted between the rail and tie plates, are said to produce equal distribution of weight and to eliminate rocking motion

plate for rail spikes, and additional holes are punched through the tie plate for independent fastenings. The tie-plate assemblies are said to prolong the

One Man Replaces Every Eight With the New READE TRACK ALIGNERS

Here is a piece of new track equipment that has been needed for years and strange to say it has never yet been made available to railroads.

Shifting out of line rail is a task that calls for heavy manpower. Frequently 15-30 men are called into action with bars to line up rail or switches. With the READE TRACK ALIGNER only incidental manpower is called for—the aligner provides the power. One, two or three men, one man on each aligner, and the power exerted exceeds that of large gangs.

Once this power is observed, the ease of handling, safety features, moving parts all enclosed, its clean design, you will agree all contribute to make this a unique piece of equipment badly needed on all railroads.

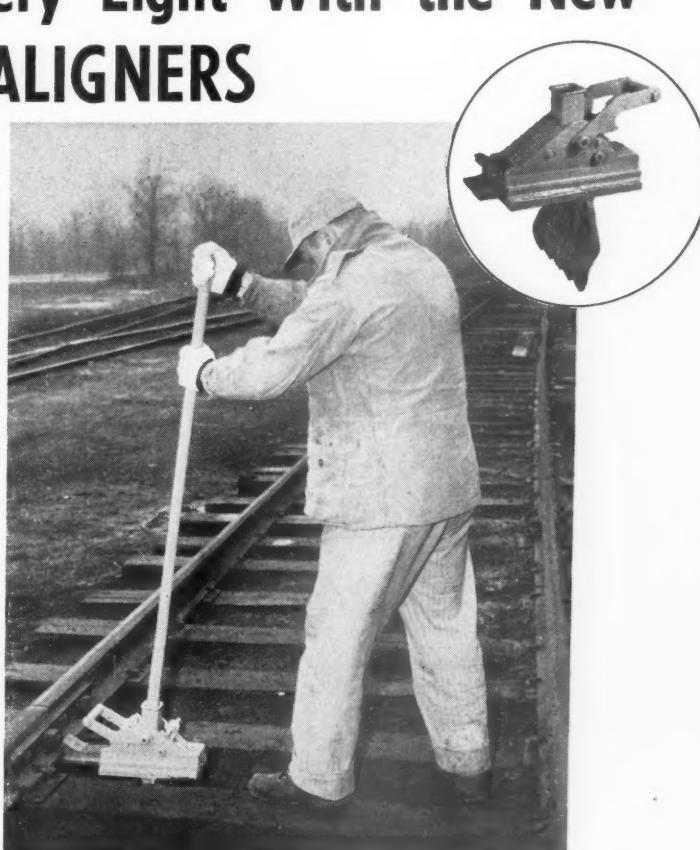
No digging of tie ends is necessary. Track shifts without humping or raising out of cross level.

For present day heavy rail the READE ALIGNER will save its cost the first day that it is put into service.

Let us demonstrate
its advantages on your own track.

READE MANUFACTURING CO., Inc.

Service Headquarters
9500 Cottage Grove Avenue
Chicago 28, Illinois





MonoGoggle*
Front and side
protection

All You Need in Plastic Face
and Eye Protection is made by

WILLSON



FeatherSpec* for
light operations



Protecto-Shield*
Full face protection



These three types of protective devices, all with one-piece plastic lenses or visors and each with many variations, give you a wide selection to meet specific requirements of work hazards. Their light weight and comfortable fit insure workers' willingness to wear them for long hours on the job. Complete information on plastic protection and other eye and respiratory safety equipment is available in the new WILLSON catalog. Get your copy from our nearest distributor or write direct to WILLSON PRODUCTS, INC., 241 Washington Street, Reading, Pa.



*T.M. Reg. U.S. Pat. Off.

service life of the ties, to equalize the loads on the ballast, to pose no seasonal difficulties, to eliminate electrolysis, and produce a cushioned, quiet, smooth-riding track.

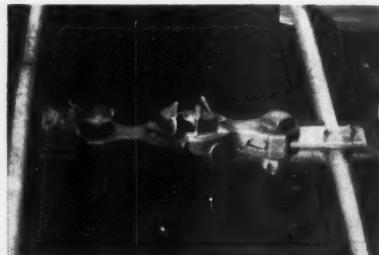
The insulated joint material consists of molded-rubber end posts, bushings and joint-bar separators. The new rubber insulation is said not only to supply insulation and a cushioning effect at the joints, but also to seal out dirt, air and water by being made slightly larger than the cavities between the joint bars and the rail.

Motor-Car Coupler

42

An automatic coupler, similar to the standard rolling stock coupler, for use on motor cars and trailers, has been developed by the Rydin Equipment Company, Warrenville, Ill. The coupler is reported to keep motor cars and trailers always coupled and in true alignment when in operation, even in case of derailment, thus enhancing the safety of the riders. Furthermore, the coupler is said to prevent jackknifing in case of severe impact.

The coupler is available in steel or aluminum. The former weighs 5 lb., and can withstand a drawbar pull of 9,000 lb. The aluminum coupler weighs 2 lb.



A trailer and motor car connected by the Rydin automatic coupler

and has a drawbar pull of 4,000 lb. The coupler can be easily attached to existing equipment in the field.

This coupler is also applicable for use on shop tractors and trailers, and materials-handling equipment. If such equipment is operated on inclines, the coupler is available with a hinged drawbar and a heavy leaf spring to hold the coupler in a horizontal position.

Nalco Weed Killer

43

The National Aluminate Corporation, Chicago, has announced a new weed-control chemical, Nalco H-170, which is reported to combine a contact, or top killing, effect with a root-killing action that substantially retards regrowth. The product has been under development for several years and was given extensive field tests on a western railroad last summer.

Nalco H-170 is a liquid, oil-base ma-

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42

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terial that requires no mixing or dilution before application. The tests are said to have shown that the chemical will not contaminate water supplies and

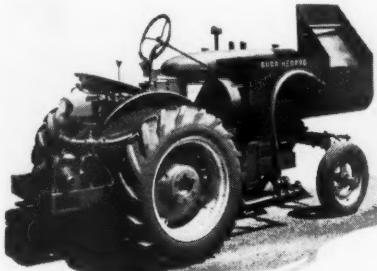


Showing the effect of Nalco H-170 weed killer on the main line of a western railroad

that it may be used safely in livestock grazing areas. Because of its low volatility, it presents no fire hazard, either in storage or during application. For normal weed killing operations the manufacturer recommends use of one gallon of Nalco H-170 for each 1,500 sq. ft. of area. Any type of sprayer may be used for application of the chemical. However, the company has announced that its own spray cars will be available, if desired, in time for the 1950 weed-control season.

Changes Made In Hebard Grouter 44

Ability to maintain continuous mixing, even when changing the positions of the grout points, is one of several improvements that the Buda Company, Harvey, Ill., has incorporated into the design of the Hebard Grouter. Continuous mixing is accomplished by connecting the two grout outlets with a return line



Railway Age—Vol. 128 No. 10



Hy-Rail Motor Car Runs On or Off Track 45

Fairmont Railway Motors, Inc., Fairmont, Minn., has announced a new motor car, the Hy-Rail, for transporting men and equipment either on the track or on the highway, as desired. It is a pneumatic-tired vehicle with hydraulically controlled flanged guide wheels which, in track operation, serve to position the car on the rails.

The motor car can be removed from the track quickly and easily by the operator. Grade crossings are the ideal

set-off locations but the car has ample power to climb over the rails, and, therefore, can be set off between crossings if necessary.

Each unit is equipped with rerailers, by means of which it can be set on the track between crossings.

The car is available in two models. One, the A30 Series A work, is equipped with a fully enclosed cab and a separate aluminum body. It has seating space for 10 men and a load capacity of 2,200 lb. The other model, the A31 Series A inspection car, is equipped with an all-steel station-wagon type body.

One Machine Raises, Tamps Track 46

The Railway Maintenance Corporation, Pittsburgh, Pa., is introducing a machine for track resurfacing operated by only three men, which combines both track-raising and tie-tamping operations. Essentially, the machine consists of a self-propelled car with a long, open frame that serves as the track for two carriage-mounted multiple tamping units, each unit being equipped with 12 pneumatic tamping guns. The car, which is 36 ft. long, is equipped with a pair of hydraulic jacks at each end, an air compressor for operation of the tamping guns, and instruments for sighting grade and cross level.

In operation, the jacks on the end of the machine in the direction of travel are first spotted in a crib. Next, the track is raised to grade, the amount of raise being determined by sighting through a transit on a high level rod held on the rail in advance of the machine. Then, while the track is supported by the jacks, the 10 to 12 ties spanned by the machine are tamped by the two multiple stamping units working simultaneously, but independently. After the ties are tamped the entire machine is moved ahead until its rear wheels rest on the tamped track.

The raising operation with the front end of the machine, and tamping, are then repeated.

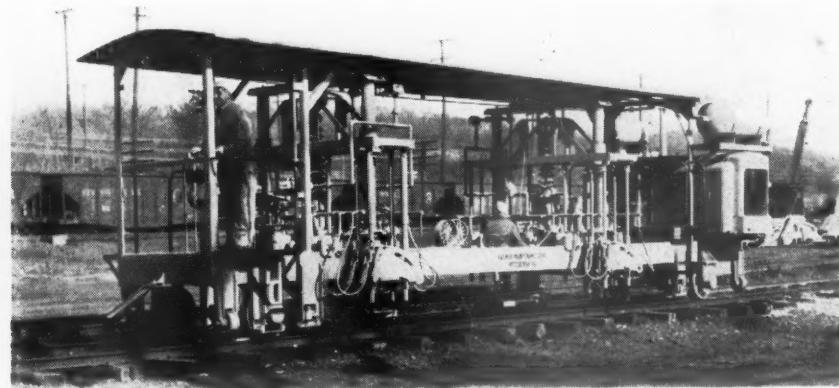


Exhibit 7a Print

to by-pass the grout mixture back into the mixing trough.

Another betterment is the relocation of the water valve to centralize all controls for the convenience of the operator. Other changes included replacement of the mechanical means of controlling the piston with a hydraulic cycling valve; chrome-plating of the piston, piston rods and packing glands; and improvements to the design of the mixing trough.

1950 Multiple Tamper 47

A number of important improvements designed to increase efficiency of operation have been incorporated in the 1950 Jackson Multiple Tamper manufactured by the Electric Tamper & Equipment Co., Ludington, Mich. One of these improvements is a new type of suspension for the individual tampers. The entire assembly is now located above the tamper motor, eliminating the possibility of the adjusting belt coming in contact with the ballast on the downstroke of



the tampers, and simplifying belt adjustment and replacement.

Other improvements include a new hydraulic ram for lifting the tampers,

which is of the externally packed type, and therefore more easily maintained; a hydraulic pump of greater capacity, which increases the lifting speed of the

Cut Handling Costs

WITH WAYNE TILTING LOADING DOCK LIFTS

SPEED UP loading and unloading in and out of freight cars and trucks.

ELIMINATE ACCIDENTS. Wayne Tilting Loading Dock Lifts level the dock to meet the load and provide a gradual slope without bumps. Hinged throw-over plates are split for easy door alignment. Write for more information.



No bumps.
Lowest truck
will clear.

Dock raises or
lowers to meet
the load.

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534 Tecumseh Street
Please send folder and complete information on Wayne
Tilting Loading Dock Lifts. For use with Railway
Cars _____ Trucks _____

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tampers; a more powerful engine; larger gas tanks that will hold enough fuel for a full day's operation; a special, heavy-duty industrial-type transmission; and a cab, equipped with curtains for protection against inclement weather and so designed that in good weather, if desired, the entire top half of the cab can be removed.

**Yard-Type
Rail Lubricator**

48

An improved machine, the Yard-Type MBJ Meco rail-and-flange lubricator, is now being offered by Maintenance Equipment Company, Chicago, for applying grease to the flanges of car and locomotive wheels in yards. The machine is confined within the limits of ordinary



(Photo courtesy Santa Fe Railway)

The improved Yard-Type MBJ Meco rail-and-flange lubricator can be obtained for application to one or both rails

car widths so as not to present a hazard to switchmen.

The general principles of design of the improved lubricator are the same as for this company's standard MBJ machine except that the universal shaft assembly has been eliminated and motion is now transmitted from the wheels to the pump-actuating mechanism through two compensating levers. The machine holds four times as much grease as the old yard-type lubricator, and the lubricant container is now set so that there is no possibility of snow and water getting into it.

**Ballast
Maintenance Car**

49

Fairmont Railway Motors, Inc., Fairmont, Minn., is introducing the W77 Series A Ballast Maintenance car, an on-track, self-propelled unit equipped on each side with scarifiers, disks and blades for breaking up and churning cemented



Burro Crane Improved 50

A new Burro Crane, the Model 15A, which has larger clutches than its predecessor, the Model 15, and an improved propelling mechanism, has been announced by the Cullen-Friestedt Com-

pany, Chicago. The larger clutches are said to provide easier, smoother hoisting, swinging and traveling. The Model 15A is available with either a Diesel or gasoline engine. Also available are such crane accessories as clamshell buckets, magnets, and tongs.

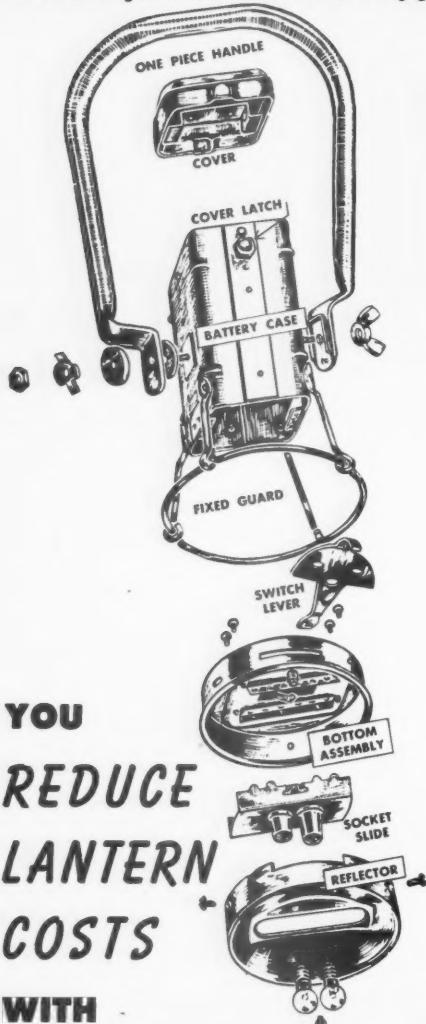
Improved Ballast Cleaner 51

Following strenuous road testing last season the Power Ballaster Division of the Pullman-Standard Car Manufacturing Company, Chicago, has made a number of design improvements in its ballast cleaner, and as a result a new improved model capable of cleaning ballast at the rate of as much as 1,000 ft. of track per hour is now going into production. This

machine is a self-contained, self-propelled unit which cleans both the crib and the shoulder ballast on both sides of the track simultaneously without fouling adjacent tracks. The greater production will be made possible by design changes in the ballast pick-up and elevator system and in the method of propulsion. A detailed description of the original model of this machine appeared in *Railway Age* of August 27, 1949.



HERE'S WHY...



**YOU
REDUCE
LANTERN
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JUSTRITE ELECTRIC LANTERNS**

PARTS EASILY REPLACED

Damaged parts easily and quickly removed. Replacement "on the job" can be made with standard parts.

NO SPECIAL TOOLS REQUIRED

Note screw type assembly illustrated above.

SIMPLIFIED SWITCH DESIGN

No wiring to get out of order.

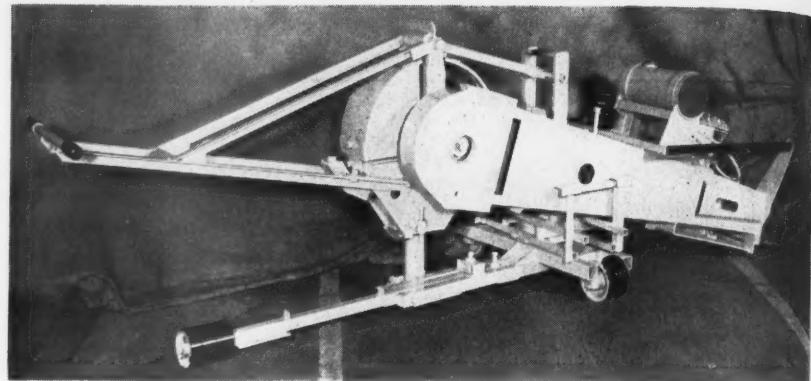
BUILT OF FINEST MATERIALS

Designed to withstand rough usage under all service conditions.

Write for Catalog on Justrite cost-reducing lanterns for railroad use.

**JUSTRITE MANUFACTURING
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2063 N. Southport Ave., Dept. D-1
Chicago, Ill.



Nordberg Announces 1950 Spike Hammer 52

The 1950-model Spike Hammer, incorporating a number of improvements, has been announced by the Nordberg Manufacturing Company, Milwaukee, Wis. These improvements include a new hammer oiler with wick feed and ample reservoir capacity, which assures better lubrication of the hammer-anvil contact surfaces; a redesigned rotor case which incorporates the anvil guide block as a one-piece weldment, increasing strength and simplifying field maintenance and

adjustment; and a redesigned guard that completely encloses the "V"-belt drive.

In addition, the truck rollers have been improved to make moving and spotting of the machine easier; the frame has been strengthened and the machine made more rugged; and adjustment has been provided in the stabilizer bar so that the driving anvil is always parallel to the vertical axis of the rail, thus assuring that all spikes will be driven parallel to the vertical axis of the rail.

or fouled shoulder or intertrack ballast in order to maintain proper ballast drainage. It may also be equipped with ballast equalizing and shaping boxes.



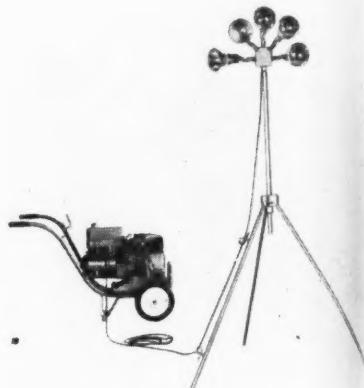
The tools are raised and lowered, moved in and out horizontally, and tilted with respect to the mounting to meet shoulder conditions—all by means of a hydraulic system with controls conveniently arranged in the cab, one set for each side of the machine. The hydraulic system is operated by a power take-off from the propelling engine—a 112-hp. Waukesha unit. The deadheading speed of the car is 35 m.p.h.

Portable Floodlights 53

A portable lighting kit has been announced by D. W. Onan & Sons, Inc., Minneapolis, Minn. Designed to furnish temporary illumination where night work is required, the kit weighs only 16 lb. It consists of a battery of five spotlights or floodlights arranged in a semi-circle

on an aluminum frame and tripod which can be quickly adjusted from 3 ft. 10 in. to 6 ft. 2 in. above the ground by means of a set screw. Each light is supported on a separate arm having two swivels so that the light can be beamed in any direction.

The bulbs are designed to operate on standard 115-volt alternating or direct current, whichever is specified, and are made of heat-resisting glass suitable for outdoor operation without harm from cold, rain or sleet. The reflector bulbs are screwed into socket receptacles provided with rubber waterproofing gaskets. A heavy-duty rubber-covered cord, 10 ft. long, and a plug accompany the kit for connecting the outfit to a portable electric generating plant or a commercial power receptacle.



Onan electric lighting kit connected to a portable electric generating plant

Folding Leads For Pile Driver

54

Pile driver leads of the pendent type, which automatically fold up when the boom is lowered to meet overhead clearances, have been developed by the Orton Crane & Shovel Co., Chicago, and have been applied to a 40-ton steam-



powered combination crane and pile driver built by this company for the Minneapolis, St. Paul & Sault Ste. Marie. An advantage claimed for the automatically folding pendent leads is that they permit the pile driver to get into the clear quickly and without waiting to remove the leads, thereby allowing its use on main tracks that must be kept open for traffic. Also, the leads can be removed, permitting the machine to be used for all types of heavy bridge-derrick erection service.

Test Kit for Diesel Water

55

A new compact test kit to give quick, accurate chromate readings of Diesel cooling water has been announced by Dearborn Chemical Company, Chicago. The new cabinet, called the Chromokit,



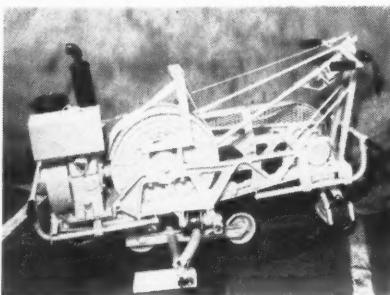
is a small metal case containing all the necessary test material for treatment adjustment and prevention of corrosion.

In application, a sample drop of the cooling water is placed on a chemically treated test card and, after two minutes, the reaction produces a color which is checked against a color guide for determining whether the treatment strengths are satisfactory or if adjustment is necessary. The adjustment chart is said to furnish an accurate and simple method of treatment determination. In addition to the color charts, dosage-treatment chart and instructions, the kit contains sample bottles with droppers and sufficient test cards for making 80 tests.

1950 Model "DW" Nordberg Wrench

56

The 1950 Model "DW" wrench has been announced by the Nordberg Manufacturing Company, Milwaukee, Wis. The new model incorporates a number of



improvements, including an engine with about 20 per cent more horsepower, a lifting bail for handling the machine with a crane, redesigned lifting handles for easier manual handling, and a rain shield to protect the friction drive from the weather.

Lima Mobile Cranes

57

The Lima Shovel and Crane Division of Lima-Hamilton Corporation, Lima, Ohio, is now producing three new rubber-tired cranes called Types 34-T, 34-M and 604-M. Type 34-T is mounted on a truck chassis with separate power units for crane operation and for truck travel. It features a 5-speed main transmission and a 2-speed auxiliary transmission which results in 10 forward and 2 reverse speeds.

Types 34-M and 604-M each have one engine mounted in the rotating assembly for applying power for all operations including propelling in either direction. Steering is accomplished through a hydraulic system. Standard equipment includes a 2-speed transmission—although



Lima Crane Type 604-M, mounted on a Maxi CC-25 wheel mounting and equipped with 45-ft. boom, can lift 35 tons

a 4-speed transmission can be had if desired—and service brakes operated by air on all wheels. Type 604-M has rigid-type outriggers.

Duff-Norton Aluminum Track Jack

58

By incorporating an aluminum housing in the design of its track jack, the Duff-Norton Manufacturing Company, Pittsburgh, Pa., has reduced the weight of the unit by 18 lb. without sacrifice in durability. The new jack, the Model



117-A, has a bale-type handle for easy carrying and spotting, a thumb guard that protects workmen while setting pawls for tripping, and a 1 1/8-in. square rack.

Other features of the jack include high-carbon, heat treated alloy steel pawls, grease-packed and heat treated

NOW! A SUPERIOR METHOD FOR CONTROLLING RAILWAY WEEDS

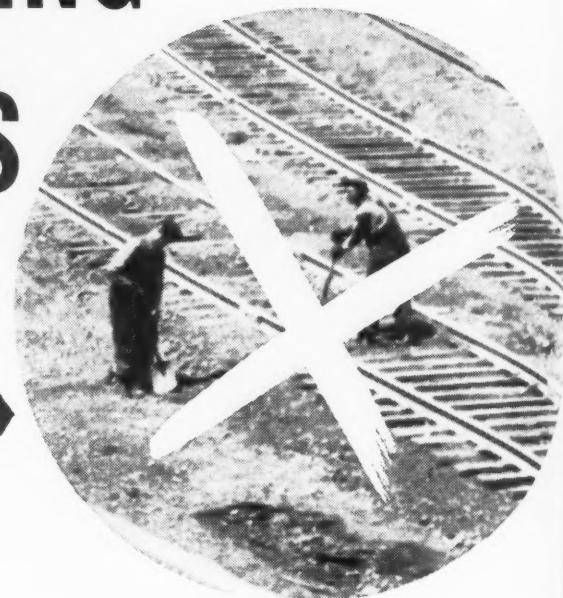
— Does away with
Expensive Hand “Clean-Ups”! →

MODERN WEED CONTROL programs must provide over-all efficiency and long-term economy to justify their adoption. Chemicals used today should do the entire job, for labor can no longer be wasted in hand clean-up operations that follow old-fashioned, temporary spray measures.

To get results where ordinary methods fail, investigate General Chemical "TCA"** Formula 7B Weed Killer. This tested, consumer-approved weed killer can provide immediate results *plus* cumulative improvement . . . at moderate cost! Weed control with General Chemical "TCA" Formula 7B will help you:

- 1 Reduce annual work train service
- 2 Free labor for other important maintenance jobs
- 3 Reduce operating costs
- 4 Insure proper roadbed, drainage and good riding qualities
- 5 Increase safety conditions
- 6 Reduce frequency of tie renewals and track servicing

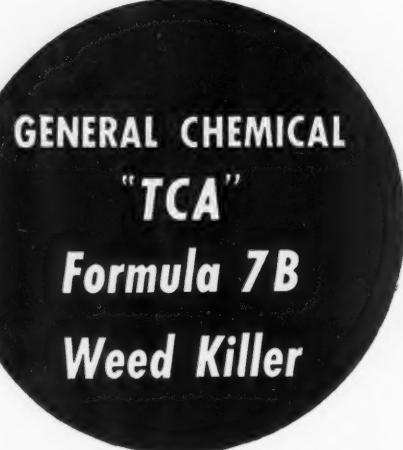
YES, THIS MODERN weed killer meets all requirements for improved control. It's different; it's definitely better. Here's why it gives the kind of results you want—



"ATOM BOMB" EFFECT ON WEEDS!

General Chemical "TCA" Formula 7B

- ★ Kills Grasses
- ★ Kills Broad Leaf Weeds
- ★ Penetrates Entire Plant Structure for More Lasting "Kill"
- ★ Suppresses Seed Germination
- ★ Helps Preserve Track Structure
- ★ Aids in Ultimate Sterilization
- ★ Resists Leaching



For detailed information, write to:

Weed Killer Department

GENERAL CHEMICAL DIVISION

ALLIED CHEMICAL & DYE CORPORATION

40 Rector Street, New York 6, N. Y.



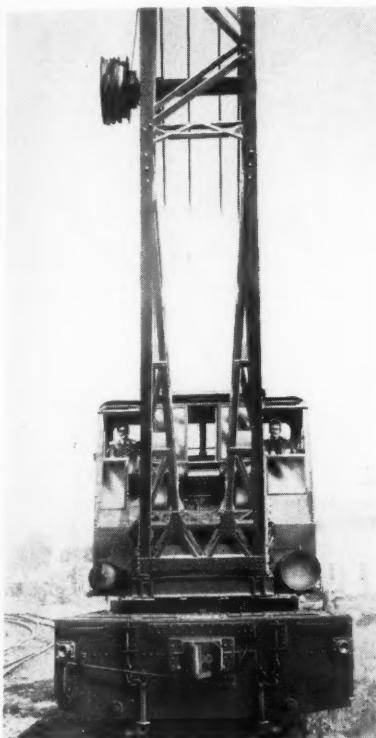
* "TCA" is General Chemical's term denoting formulations containing the free acid of Trichloroacetic Acid only. The water soluble salts are not used in Formula 7B.

bushings, and a hardened steel wearing plate to protect the housing. The jack has a capacity of 15 tons, an overall height of 22 in., a raise of 13 in. and weighs 42 lbs.

Dual-Control Locomotive Crane

59

The Industrial Brownhoist Corporation, Bay City, Mich., has developed a Diesel-operated locomotive crane that provides the operator with a wide range of vision



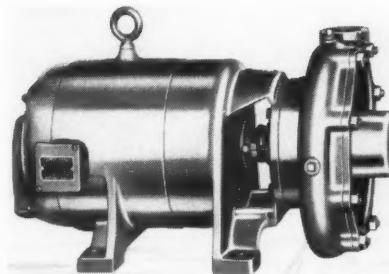
from either of two control positions, one on each side of the cab. These dual controls enable the operator to work from the side of the cab that gives him the best view. By locking the controls on one side, he can shift to the other whenever the work requires. If desirable, two men, one at each control position, can operate the crane.

These cranes are furnished with 50-ft. open-type booms, have three travel speeds up to 13 m.p.h., and are equipped with a single travel-gear disengaging mechanism that makes it possible to prepare the crane quickly for hauling in a train.

Alta Centrifugal Pumps

60

A new line of close-coupled and pedestal-mounted centrifugal pumps, the Alta line, has been developed by Gorman-Rupp Company, Mansfield, Ohio. These



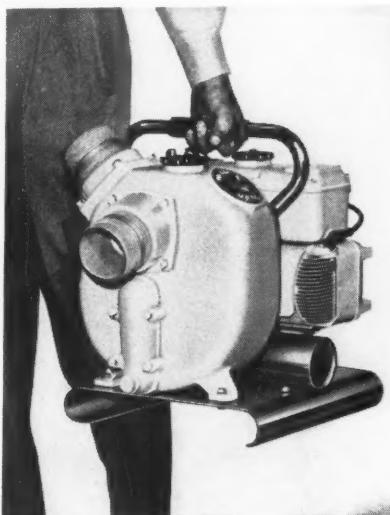
pumps are reported to perform extremely well under varying conditions of pressure and suction lift, not only for water but also for all liquids and solutions up to 2,000 viscosity. Rapid wear of the packing rings is said to be prevented by relieving the pressure at the stuffing box by use of balance rings. Pressure reduction at the stuffing box also reduces the wear on the stainless-steel shaft sleeve. The pumps are said to run quietly at higher suction lifts, resulting in a longer life for pump parts with a related reduction in maintenance.

Lightweight Portable Pump

61

McCulloch Motors Corporation, Los Angeles, Cal., points out that its new lightweight, self-priming, portable centrifugal pump is rated at 15,000 gal. per hr. output.

This McCulloch Portable Pump is powered by a 5-hp. gasoline engine and is said to have a kick-proof automatic-rewind starter, rain-proof ignition, and an automatic governor which controls its speed at all loads. The pump is made of cast aluminum and is said to have a 28-ft. suction lift. The pump and engine assembly is mounted on a spring base to insure a footing on all types of ground, and has a center balance handle to add to its portability.



Truck-Mounted Shovel-Crane

62

A 12½-ton truck-mounted shovel-crane with Speed-o-Matic hydraulic controls, with the HC-51, is now being offered by the



Link-Belt Speeder Corporation, Chicago. The truck carrier, equipped with six wheels, has ten speeds forward, two in reverse, and travels over the road at speeds up to 37 m.p.h. Features of the unit include finger-tip control of all crane operations, simplified servicing, and low maintenance costs. The upper machinery can be easily converted for all conventional front-end attachments—shovel, trench hoe, pile driver or crane boom.

Improved Gradall

63

The Warner & Swasey Co., Cleveland, Ohio, has announced that the latest model of the Gradall—a multi-purpose earth mover—incorporates a number of improvements designed to increase the efficiency of the machine. Furthermore, the new Gradall is now being offered with a Diesel power unit if desired.

Greater stability has been provided through a new design of rollers and bearings; greater operator visibility has been attained through redesign of the cab; the lifting capacity of the telescoping boom has been increased through the provision of a 2,000-lb. counterweight; the elevating cylinders have been relocated to provide a straight



thrust on the boom, with a minimum of pivoting; and five rollers, instead of three, have been provided for the boom extension.

5019-A

CHICAGO AND NORTH WESTERN

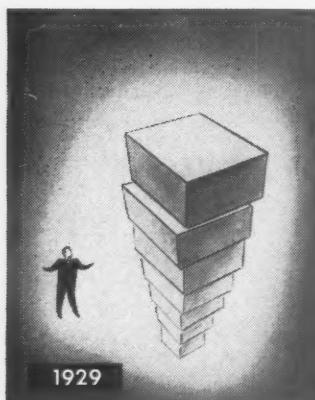
One of Chicago and Northwestern Railroad's Diesels equipped with reflective sheeting

How research builds tonnage . . . and makes tonnage carriers safer

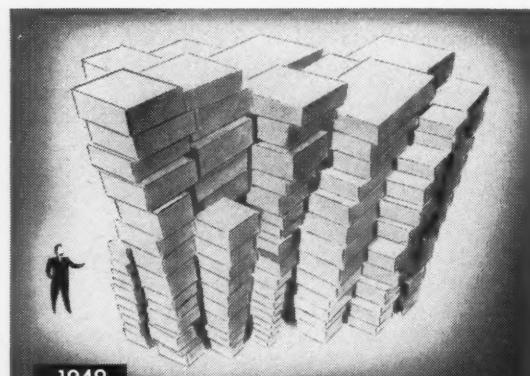
MANY INTERESTING NEW PRODUCTS have been created by 3M researchers during the last 20 years, resulting in a tremendous growth in 3M plants and shipments. Among the newest of these products is "Scotchlite" Reflective Sheeting, illustrated above, which reflects auto and locomotive headlights with a brilliance

235 times that of white paint! Many railroads are already using this new sheeting on wayside and crossing signs, boxcars and diesels. It gives them complete nighttime visibility, helps prevent costly accidents and schedule disruptions.

Our shipments reflect power of research in increasing business



1929—Tonnage: 14,000 tons.
Major products shipped: 2
(coated abrasives, masking
tape).



1949—Tonnage: 1,004,093 tons.
Major products shipped: 19*
... AND THERE'S MORE ON THE WAY.



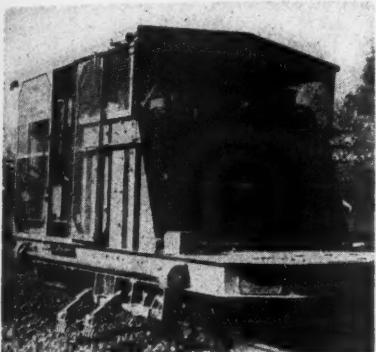
For details about what "Scotchlite" Reflective Sheeting can do for you, write Dept. RA30, Minnesota Mining & Mfg. Co., St. Paul 6, Minn.

* Reflective sheeting, coated abrasives, masking tape, cellophane tape, electrical tape, shoe tape, plastic tape, filament tape, industrial adhesives, undercoatings, marine adhesives and calking compounds, tile and construction adhesives and compounds, sound-recording tape, non-woven synthetic fabrics, roofing granules, special synthetic resins, non-slip cleats and strips, reflective compound, tympan papers.

Improvement in Power Ballaster

64

A new device has been added to the Power Ballaster by the Pullman-Standard Car Manufacturing Company, Chicago, by which, when the machine is in operation, the weight of the forward



On this Power Ballaster the weight is removed from the front wheels when it is in operation

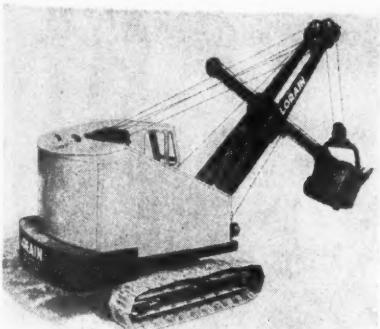
part is caused to bear on the rails only a few inches ahead of the last tamped crosstie instead of being transmitted through the front wheels onto untamped track. It is expected that, by thus removing the load and the consequent vibratory action of the machine from the untamped track, a higher degree of perfection will be secured in the finished track. The new device will not only be standard equipment for all new Power Ballasters but may also be applied to machines already in use.

Theew Introduces The Lorain TL-25

65

A new shovel-crane in the $\frac{3}{4}$ -yd. class, the Lorain TL-25, is now being offered by the Theew Shovel Company, Lorain, Ohio. The machine is available in three different crawler mountings and a wide series of rubber-tired mountings, the latter including two-engine moto-cranes and single-engine self-propelled carriers.

The features of the Lorain TL-25 include a turntable construction which permits removal and replacement of com-



Railway Age—Vol. 128 No. 10

plete assemblies as integral units; electric starter and lights; five identical clutches to control all machine operations; one-piece all welded turntable bed; hook rollers mounted on drop-forged brackets with centralized pressure lubrication; machine-cut internal ring gear; oil-enclosed machine-cut gears; anti-friction bearings; and power load lowering. The machine may be equipped for shovel, crane, dragline, clamshell or hoe work.

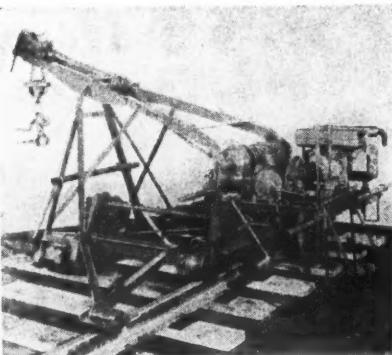
Improvements Made In Meco Rail Layer

66

The Maintenance Equipment Company, Chicago, has announced a number of improvements in its power rail layer. The improved machine, the Type C Meco Power Rail Layer, is self-propelled while engaged in laying rail, eliminating the need of pushing it by hand as each rail is laid. Also, the auxiliary rail used in previous models for heeling the new rails into position is no longer needed.

Recent improvements in the rail layer included the addition of a run-up ramp to be used in conjunction with the set-off and transfer device furnished with the machine, changes in the operator's platform and in the length of shifting levers; and the addition of an expanded metal guard around the engine muffler.

The manufacturer claims that, on the basis of service tests, two of these improved rail layers will install 78-ft. rails at the rate of one per minute with a force of only six men.



Pneumatic Tools

67

The Chicago Pneumatic Tool Company, New York, has added some new and improved models to its line of pneumatic tools. Among these is the CP-14 Handril, a self-rotating rock drill weighing but 14 lb., for drilling holes from $\frac{1}{4}$ in. to $1\frac{1}{8}$ in. with one-man operation. Another tool is the CP-59 sinker drill which is in the 55-lb. class for drilling holes up to 25 ft. It has a four-in-one backhead



for making quick changeovers eliminating the necessity for individual backheads for dry and wet operations.

Another air-tool model is the CP-365-RP impact wrench, which weighs 32 lb. and is equipped with an 8-in. extended shank. Also included in the additional models is the CP-113 demolition tool, a general utilities tool in the 30-lb. class, and the CP-118 demolition tool, which is in the 70-lb. class for heavy-duty application.

Gasoline-Powered Homelite Chain Saws

68

A new line of gasoline-engine-driven chain saws, featuring a complete saw weighing only 33 lb., has been announced by the Homelite Corporation, Port Chester, N. Y. Light weight has been achieved by the use of die-cast magnesium and aluminum alloys for all major castings. The Homelite engine has been kept to a minimum size by a compact design, with cylinder, magneto and drive housing mounted directly on the crank case.

The Homelite chain, chrome-plated and easily sharpened, has a narrow kerf and simple design for fast cutting and reduced drag. The complete line of saws includes straight blade units in 14-in., 20-in., 27-in. and 30-in. sizes, and a non-binding bow saw.

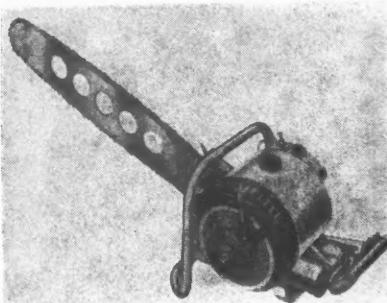
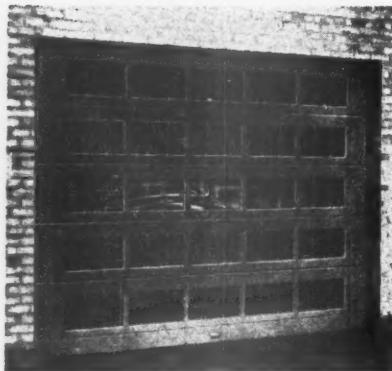


Exhibit In Print



Air-Filter Door For Paint-Spray Rooms 69

The Kinnear Manufacturing Company, Columbus, Ohio, has added to its line of sectional, all-metal Rol-Top doors a new type designed especially for closure of paint-spray rooms. The panels of the door, except for those equipped with glass for visibility, are fitted with rows of standard, furnace-type, spun-glass filters which, while the door is closed, permit fresh air to flow into the room, and also clean any escaping air.

The air-filter door, like other Kinnear Rol-Top doors, is equipped with a torsion-spring counterbalance and ball-bearing rollers moving on steel tracks, and can be easily raised to a horizontal overhead position. It is available in any size for either manual or motor operation.

Variable-Speed Winch 70

A winch featuring the ability to change speed from slow to fast while under heavy load is being introduced into the railroad field by Franklin Railway Supply Company, New York. Known as the Al Evans winch, it can be applied to either wheel-type or crawler tractors, cranes and shovels, and receives its power from the powered unit by spur gears, roller chain and sprockets. It is also available with a skid mounting,



and is powered by a 25-hp. gasoline engine.

It has controlled lifting power and uses its own gear system, power take-off, transmission and tractor clutch as a brake. Weighing approximately 900 lb., it is said to be extremely rugged, with a power limited only to the breaking strength of the cable in practical operation. It has a line speed from 200 to 300 ft. a min. with a maximum line pull of about 65,000 lb.

Bogle Weed Killer 71

A new weed-killing formula consisting of sodium trichloroacetate (T.C.A.) and sodium chlorate is now being offered by the R. H. Bogle Company, Alexandria, Va. This combination, the company reports, gave very satisfactory results in research field tests carried out last year in six southeastern states.

The company reports that in early summer tests the new combination killed 80 to 90 per cent of Bermuda grass, 80 to 90 per cent of Johnson grass, and 90 to 100 per cent of annual weeds. In late summer tests, the company reports, the chemical killed 80 to 100 per cent of Bermuda grass, 90 to 100 per cent of Johnson grass, and 90 to 100 per cent of annual weeds.

Coatings for Rails 72

The Rinshed-Mason Company, Detroit, Mich., is introducing a new product, known as Rust-Chek, consisting of a primer and a finish coating, which, when applied to rails, protects them against corrosion. This is a flexible material with high adhesive qualities and is reported to retain its flexibility under



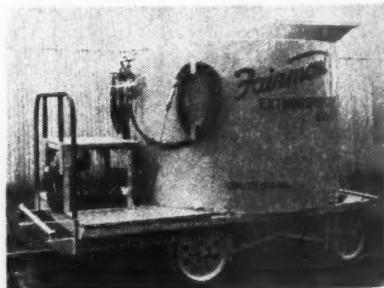
Rust-Chek can be sprayed on rails by spray-gun equipment such as this, or it can be applied with a brush

severe temperature variations in the weather and to possess substantial resistance to abrasion. The primer is identified as Rust-Chek No. X-8351 and the finish coat as No. X-8352.

The material is specifically designed for use on rails in tunnels and is reported to have been in such service for 1½ years on the Great Northern without breakdowns. The finish is also applicable to other locations where corrosion problems exist, as in some trainsheds, on tracks running close to salt water, on rails exposed to brine drippings from refrigerator cars, and through highway grade crossings.

Extinguisher Car and Trailer 73

Fairmont Railway Motors, Inc., Fairmont, Minn., has enlarged the water capacity of its extinguisher car and trailer for patrolling track areas following weed burning. Designated as W73 Series A, the extinguisher car is a towed unit having an 800-gal. tank and a rust-resistant pump directly driven through a flexible coupling by a single-cylinder air-cooled gasoline engine. The unit is equipped with three synthetic hose lines, two of which are 1/2 in. in diameter and 18 ft. long, with hand valves and spray nozzles on extension tubes. The third hose is 5/8 in. in diameter and 50 ft. long, with a large nozzle and hand valve.



The improved trailer unit, known as W74 Series A, has a tank of the same capacity as the extinguisher car, but does not have a pump, engine or hose lines.

Deeper Corrugated Sectional-Plate Pipe 74

The Young & Greenawalt Co., East Chicago, Ind., is now fabricating galvanized sectional-plate pipe and arches in gages from No. 12 to No. 1, instead of No. 7 to No. 1, as previously. Also, a 2-in. depth of corrugation is now employed, which makes it possible to achieve

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equal strength with lighter gages. Previously, the 1 1/4-in. depth of corrugation was used except on heavier fabrications.

**Portable Crane
For Car Shaker**

75

The Ross & White Co., Chicago, has developed a portable crane for moving its Red Devil car shaker from one car to another and lifting it for attachment



to or removal from car sides. The Red Devil car shaker consists essentially of a steel column equipped with a top hook and a vibrating mechanism, and weighs about 1,000 lb.

The new crane is a steel, four-legged carrier, standing about 11 ft. high with one set of legs (in front) mounted on rubber-tired wheels. The other set of legs has short pedestals, and handlebars projecting outward from the rear. The hoisting apparatus consists of a wire rope, a hook, a pulley hung from a cross member at the top of the carrier, and a hand winch fastened to the side of the crane. Almost the entire weight of the shaker, as lifted and carried about, is supported by the wheels.

Fleetwelder 200

76

A 200-amp. alternating-current industrial-type welder with an arc booster and substantial reserve capacity is announced by the Lincoln Electric Company, Cleveland, Ohio. The unit is said to be especially suitable for both job shop welding and industrial welding because of its ability to handle a wide range of work in thick as well as thin material. The arc booster, it is claimed, adjusts the welder to start the arc auto-



matically the instant the electrode touches the work on either thin or heavy material. The arc is given an extra burst of current which starts the arc and secures penetration at the start of the weld, and the current automatically returns after a few seconds to the correct

TIME-SAVER CARD for your convenience in obtaining, without obligation, more information on any one or more of the new equipment items featured on preceding and following pages

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PERMIT No. 153
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Circled below are items on which I request more information

CATALOG NEAREST SALES OFFICE PRICE INFORMATION

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79					

NAME
TITLE OR POSITION

COMPANY

CO. ADDRESS

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1, 1950

Exhibit 7a Print

amount set for the job. Electrodes ranging in diameter from 5/64 in. to 1/4 in. may be used with it.

Loading Dock Ramps 77

Loading and unloading of highway trucks at freighthouses can be simplified through the use of tilting loading-dock ramps which are being introduced into the railroad field by the Wayne Pump Company, Fort Wayne, Ind. These ramps are recessed in the dock and are equipped with hinged leveling fingers and hinged throw-over plates. The leveling fingers spot the free end of the ramp at truck-floor level, and may be lowered out of the way when not in use. Installations are individually designed and lifting and lowering heights, platform sizes, controls, and power units using either air or an electric pumping unit, may be varied to meet conditions.

Weed-Killer Chemicals 78

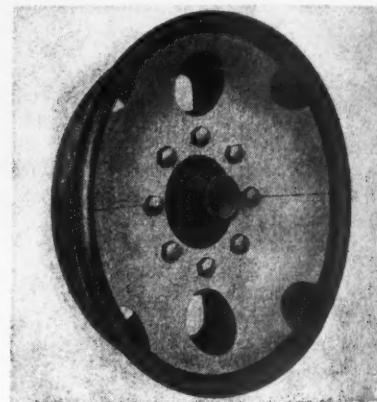
It has been announced by the General Chemical Division, Allied Chemical & Dye Corp., New York, that due to improvements in plant manufacturing facilities and processes, its weed-killer formulas 7, 7B and 7B-D are now available in



7B-D is similar in composition to formula 7B, but with the addition of 3/10 lb. of 2,4-D per gallon.

Fairbanks, Morse Wheel Silencer 79

Fairbanks, Morse & Co., Chicago, has developed a device designed to minimize the undesirable noises usually encountered with demountable hub steel motor-car wheels when in operation. The product is a sound-deadening disk, in two sections, which can be applied to any type of motor-car wheel (except those with reinforcing ribs on the hubs) without removing hub or wheel plate.



higher concentrations. Formula 7 is a compound of aromatic oils containing 5 lb. of trichloracetic acid per gallon. Formula 7B contains 5 lb. of TCA per gallon of aromatic oils, plus 3/4 lb. of pentachlorophenol per gallon. Formula

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"EIGHT WHEELS AND A BOX"

**An interpretive review in non-technical terms of
the evolution of the present-day box car and what
is being done toward its continued development***

By A. N. CAMPBELL
Mechanical Engineer (Car)
Canadian National

Research and development in the design of box cars has been continuous for over 75 years and, literally, millions of dollars have been spent on it. There may be some who find this hard to believe. The car department men of the past were a modest lot. They, perhaps, have not publicized their efforts enough; they are always too busy studying details. Sometimes it must appear that a car designer spends a lot of time on insignificant items. Why? Well, a freight car must be as nearly indestructible as it is possible to design its every part. It must be designed more to withstand the abuse to which it is subjected than for the load it is to carry.

I consider the reference of a friend of mine to a box car as "eight wheels and a box" a tribute to the car department men of America. When you consider that there are over two million freight cars running freely about the United States and Canada, the size of the investment in freight cars dictates that they must be as plain and useful as possible; one useless gadget or unnecessary detail costing \$10 per car, would represent an investment by the railways of America of an additional \$20,000,000. It is a credit to the railways that the design has been kept so simple as to be referred to in that manner. The Canadian National alone operates almost 104,000 freight cars valued at almost \$640,000,000.

Details Cost Money

Now you can see why a car department man must pay attention to detail. He is not playing with pennies; maintenance of the average freight car costs about \$255 per year. If he can by his diligence save \$10 per year per car in maintenance, he could be worth to his company, theoretically at least, several times the salary of the President of the United States. Conversely, I heard recently of a United States railroad which accepted a slightly different form of construction on a new order of freight cars. The calculations were all right—it was cheaper and it was lighter—but it didn't stand up in service and, after the cars were operated a couple of years, the construction showed signs of failing, not seriously, but enough so it will cost \$150 to \$500 per car to correct the weakness.

We all occasionally hear earnest criticism and suggestions from people on the street, shippers, and even some of our own railway people regarding the de-

*This article is adapted from an address at a recent meeting of the Canadian Railway Club.

sign of freight cars, box cars in particular. We sometimes hear comments from engineers in other industries and are questioned as to why certain obviously advantageous improvements or advancements cannot be incorporated into freight car design. For example:

"The all-steel box car looks the same today as the first cars of this type looked 25 years ago. Why have there been no advances in its design? The automotive and truck transport people bring out new models every year."

"Why cannot freight cars be streamlined so that freight trains will have the glamour of modern American streamline passenger trains? Remove the ladders and grabs projecting from the sides and set them in so that they will not be damaged and the appearance of the car will be improved."

"Why do railways continue to build freight cars weighing 20 to 25 tons?"

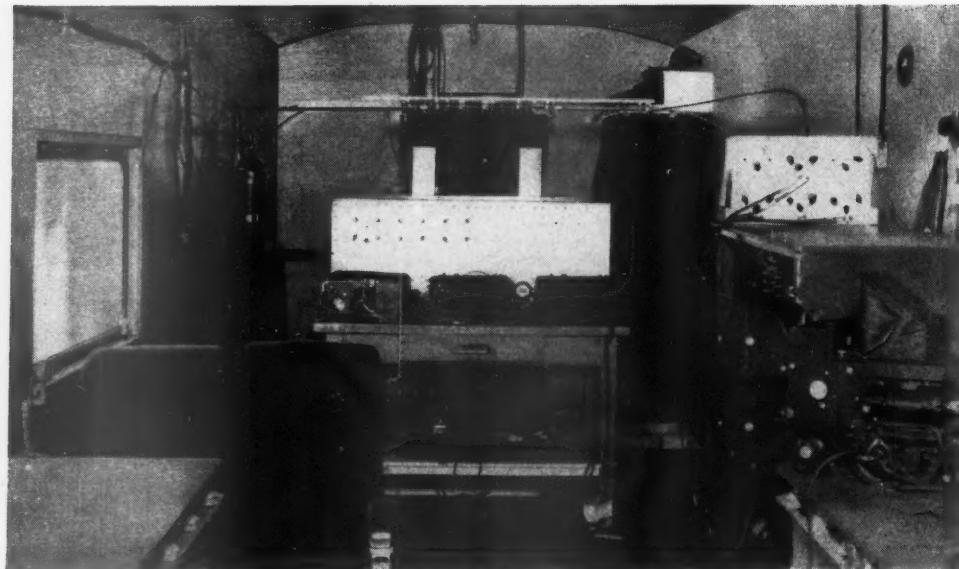
"Why are not the very light metals, such as magnesium or aluminum, more widely used in freight cars? If these metals are suitable for airplanes, they should be suitable for freight cars."

The designer of a box car may be considered to be hemmed into a certain area by a sort of picket fence consisting of various requirements, rules and standards. He must work within this area. Every railway from here to Central America must be assured that all cars built and offered to them in interchange are capable of operating safely over their lines, as well as the lines of the owners, and that, should it be necessary for them to turn a car over to another railroad, they will be assured that any other railroad will accept the car and its load.

The car must not require a large amount of maintenance attention and, if it does, parts stocks at New Orleans, New York, or Winnipeg must be adequate to repair it.

A railway freight car must be symbolic of permanence. Its permanence is brought about by its unusual structural strength. It must withstand all conditions of corrosion and erosion with a minimum of maintenance attention. In addition to carrying its load, it must stand all manner of abuse in loading and unloading, in collision, in switching, and in road haul, as a link between the locomotive and up to 150 additional cars in the train.

No car of untried type can be offered or accepted in interchange until its size, capacity and design have been approved by the Transportation and Mechanical divisions of the Association of American Railroads. Underframes of all cars, including center sills, must have a minimum cross-sectional area and meet certain strength and deflection requirements. The same applies to wheels and axles and even to the receptacles for de-



Some of the instruments in the Budd research car. This was the laboratory in the A.A.R. wheel-balance road tests

fect cards, routing cards and placards. Journal bearings and wedges must be of standard design. Trucks under all cars must be of an approved type and, in addition, various parts of each approved design of truck must meet certain fixed static and fatigue test requirements under the supervision of A. A. R. representatives.

Hand brakes, their location on the car, their connections and their design must be tried, tested and approved. Every draft gear and its attachments must pass certain capacity, endurance and sturdiness tests carried out on special equipment operated by the railways at Purdue University. Couplers, including all parts and operating attachments, must be of one design only.

Air brakes and all their parts and associated appliances must be of one standard type. Running boards and brake steps must be built to rigid specifications. Even the lettering on a car must be laid out in a prescribed manner; the wording of certain signs and stencils must be the same on all cars.

Laws of the United States and Canada require that safety appliances on a car, including handholds, sill steps, ladders and running boards, be of certain minimum dimensions, number and location on the car as specified by act of government.

All cars must be built with a certain contour to come within clearance limitations. The height of the car from rail to top of running board must be kept to 15 ft. 1 in. and width to 10 ft. 8 in. This, in turn, limits inside dimensions. The length of cars cannot be changed readily, as cars are usually spotted at loading docks all over the continent in such a manner that running boards can be laid through the doorways to permit passage from one car to another on adjoining tracks. The lengths of most loading docks are based upon handling a specified number of standard length cars. Thus, the designer has little leeway in which to work as far as dimensions or cubic capacity of the car is concerned, when it is built new or rebuilt.

This may create the impression that all of these various requirements retard progress and tend to discourage originality and the development of new ideas. Nevertheless, it is a fact that all these regulations are adopted upon the vote of the majority and in the common good.

Very few railroads can afford the tremendous engineering and research departments necessary to independent development in the designs of cars. Independent experimental work is desirable but the results must be thoroughly tested in actual service before large numbers of cars are built and the risk of expensive alterations to thousands of cars is incurred. Railroads have found that cooperation and common endeavor can result in greater progress with tremendous economy. Railroads of today, more than ever before, must work together against their common competitors.

Gradual standardization of parts of freight cars has been brought about by the A.A.R. Interchange Rules. Today, it is very rare for a car to be held out of service awaiting proper material for repairs; in practically all cases, prompt repairs may be made to any part of any car using standard material from the stores stock of the railroad handling the car. These rules are not drawn up from or based on guesses, assumptions or opinions. Each regulation is based on years of development. Let's look at a few of them.

The Standard Box Car

The evolution of today's freight car has been very gradual. The first American cars carried a load of 10 tons. We are building cars in Canada today designed for a total weight on rail of 450,000 lb. In 1923 the Committee on Car Construction completed drawings for a recommended practical steel-sheathed, wood-lined box car. The program under which this car was created had as its object the production of a design representing the latest state of the art in reference to weight, utility, cost, strength distribution and utilization of material. The idea was that, when the design was completed,

tested and accepted, it would be too attractive a proposition for the railroads to disregard and would be of such character that every railroad would adopt it as standard and construct all its future equipment to this general design.

Tests and development continued for ten years until, finally, five new sample cars were built for the A.A.R. in 1933. Extensive extensometer and deflectometer tests were made on these cars to check the design under static and dynamic load conditions intended to approximate the effects of movements at high speeds over average trackage and roadbed. As a result of the various tests, the design was modified slightly to overcome indications of weakness which appeared in the underframe and superstructure.

One of the cars was then turned over to the Chesapeake & Ohio for carefully planned and comprehensive road service tests under full axle loads. The remaining four cars were placed in regular service carrying class one commodities. When the majority of the railroads indicated that they were satisfied with the design, it was made standard. Further revisions in the design of this standard car, with appropriate testing, have been continued up to the present, and it appears now that, for many years to come, the general appearance and design of this car will remain with us.

Thousands of cars have been built to this general design. The Canadian National alone has built thousands of A.A.R. standard design cars. Those built in 1937 have not received general repairs since they were placed in service, except for a few damaged in accidents. From this history of the development of the box car, it is obvious that the same results could not have been achieved by any individual or any single railroad.

The Draft Gear

The bumper on a highway vehicle is not very important; it is used only in emergency. On the other hand, the draft gear behind the bumper on a freight car forms the connection between the coupler and the car to cushion shocks when cars are shoved together and to provide a resilient connection when cars are hauled ahead. Few people realize that when one fully loaded car strikes another the pressure on the draft gears between the cars may reach 600,000 lb., i.e., 300 tons. In dynamometer tests we have actually found that there are forces over the magnitude of 1,000,000 lb. between cars in a train under certain conditions.

An inventor recently submitted a new design of draft gear. He felt, in good faith, that he had the answer to one of the problems of the railways. His idea consisted of the use of an air cylinder and piston located behind the coupler so that the shocks on the coupler could be cushioned on compressed air. He had overlooked the terrific forces developed in railroad service. The air cylinder required to cushion the load which it would need to take would be over 9 ft. in diameter. It might do a good job, but the draft gear would fill the end of the car.

The friction draft gear, with much higher capacity, was invented by George Westinghouse and the first sets were placed in service about 1897 or 1898. In 1908 a draft-gear drop-testing machine was developed which, for the first time, used a 9,000-lb. falling weight to simulate conditions encountered when two cars come to-

gether. After much independent testing and research, the A.A.R. established a draft-gear laboratory at Purdue University, installing a huge 27,000-lb. drop-test machine.

The 27,000-lb. hammer is raised by screws between guides in a frame. When the hammer is released, it crashes down upon the draft gear under test which is seated on an anvil embedded deeply in the earth. Some idea of the tremendous forces used is indicated by the fact that hands have been shaken from clocks on the campus of the university where the laboratory building is located. Plugs have been shaken out of telephone switchboards a considerable distance from the laboratory buildings.

The draft gear is so vital an element in the successful operation of railway cars that it merits the tremendous amount of study given to it. A full-time staff at Purdue University is employed by the A.A.R. testing draft gears all the year round. Every type of draft gear must undergo these tests and meet them satisfactorily before being given certificate of approval for application to freight cars intended for interchange service. Each approval test costs about \$1,600, which is the fee paid by each manufacturer to have his device tested. Then we are still not satisfied. At regular intervals representative specimens of each type of draft gear are removed from cars in service and tested to see how much they have deteriorated with use. Reports are made available to all railroads to assist them in selection of devices which will best protect their cars.

A draft gear which exhibits satisfactory qualities when new, but which will soon fail or lose capacity and thus fail to protect the car for many years is an expensive luxury which we cannot afford. When a car is in service it is very difficult to determine whether



The instrument recording platform and table in an American Steel Foundries laboratory car employed in the A.A.R. high-speed truck tests

or not the draft gear, hidden between its sills, is performing properly. With the period between shoppings of steel cars now exceeding 15 years, the draft gear must be expected to retain its efficiency under fair usage for a corresponding period of time.

There is no doubt that some weight can be safely removed from a car which is protected by a modern, fully operative, properly maintained draft gear, and more weight could be removed from car structures if draft gears could be developed to absorb even more of the tremendous energy input of switching impacts, the substantial part of which is passed through to the car structure. The railways and railway equipment manufacturers are spending thousands of dollars in research in this direction right now.

Trucks

Trucks under older designs of freight cars were of the arch-bar variety. Ordinary coil springs were used to support the weight of the car. It became apparent as speeds increased that damage to both car and load could be caused by unrestrained action of springs. It is easy to visualize the springs under a car as something in the nature of a swing continuing to move farther, alternately in two directions, under the stimulus of repeated light impulses at regular intervals in one direction. The jolts to car wheels at rail joints are the periodic impulses given to truck springs. When a car reaches a certain speed, probably between 40 and 50 m.p.h. with common types of freight car springs, these jolts, while possibly very slight, are occurring at just the right frequency to fit in with the bouncing of the springs. These two actions occurring simultaneously result in shocks being passed to the car structures as well as to the lading in cars when the springs go solid at the peak of the oscillations.

To break up these harmonic oscillations, a snubbing device of some sort must be used. The most simple type of snubber consists of a frictional resistance at regular movement of the coil of the springs. These snubbers are furnished in various forms, either as a part of the truck or as a separate device, located in or outside of the spring group.

A. A. R. truck investigations began with tests conducted in 1939. Most elaborate tests are now being conducted by the A. A. R. on the Illinois Central between Gillman, Ill., and Clinton. I had the privilege of riding one of the runs a few weeks ago. The test train consists of a standard box car mounted on trucks of known characteristics, a laboratory car and another test car, identical with the first but equipped with the particular trucks under test at the time. Compact weights are used to simulate lightly loaded and heavily loaded car conditions. There are vertical dynamometers at both ends of each car. At one end of each test car there are lateral dynamometers. The magnitude and number of vertical shocks during each test run may be read from indicators in each of the test cars. All lateral and vertical shocks are recorded in the laboratory car. The test runs are made over 128 miles of track in two directions. Tests have continued through 1948 and 1949 and will go on into 1950. Over \$200,000 has been spent on these particular tests. This gives further idea of the money being spent on freight-car research.

[As further examples of what has been done in the development of freight cars Mr. Campbell then reviewed the process of testing side frames and bolsters, and the standardization of couplers and air brakes.—Editor.]

To repeat, regulations prevent to some extent any radical change in the standard box car. These are the posts of the picket fence surrounding the activity of the designer of freight cars which must operate freely over the railways of North America. I am not here to defend all these regulations; there is no doubt that some exceptions might be taken to some of them. They are, however, drawn up for the common good of all the railways. Without these regulations there is no doubt that the railroad industry as we know it could not survive. What would happen today if a load originating in Montreal destined for New York could not be handled through in one car but had to be transshipped at the end of the rails of the three or four roads handling it because the car carrying it could not be operated off the owner's rails?

The picket fence surrounding the railway car designer does have some small openings, however, through which he can expand his efforts into a little larger area bounded by certain definite economic barriers which must be set up by each railroad individually. Neither the first cost nor the maintenance cost of cars can be increased by the use of more elaborate designs or attachments, without proof that there will be an adequate return or a reduction in maintenance and operating costs to offset the additional expenditure.

The A.A.R. recommends that cars be built with 6-ft. or 8-ft. doors, but if traffic offered on any individual railroad indicates that a larger size of door should be used, the design of the car can be modified to suit. This is where other departments of the railroad enter the picture. Large, non-standard doors cost more money; the superstructure of the car requires modifications to reinforce it to compensate for the removal of a part of the side structure; maintenance may be higher. These things must all be taken into consideration.

Protection of the car and its joints from corrosion and erosion deserves a great deal of study on the part of each individual railroad. The paint, the primer, the car cement, and the stencil paint must be of a quality which will protect structures worth millions of dollars for periods of fifteen years or more.

The prerogative is left with each railway as to whether the joints of the car will be welded or riveted. This is not as simple as it sounds. Calculations based on first costs may not be reliable. The A.A.R. recognized an alternate design of lightweight welded cars in 1946, but whether the welded car will stand up for the fifteen years of service of which its riveted predecessor has proved itself capable will not be definitely known for years to come. One car manufacturer has been reported to have found it necessary to spend a million dollars to set up a plant for the construction of welded cars. What can each railway afford to spend on equipment required to carry out repairs to these cars in its various shops? Each road must decide for itself, based on its peculiar conditions and experiences.

Most railroads now have some lightweight welded cars in service. Canadian railroads have not built them in large numbers. They are proceeding cautiously. In any present-day considerations of the designs of car equipment the value of reductions in weight cannot

be overlooked. Low-alloy, high-strength steels are available and aluminum alloys can be used to provide strength equivalent to open-hearth steel. At the same time, with the use of either of these materials to reduce weight the cost of the car goes up.

In any study of the value of light weight consideration must be given to the fact that a substantial part of the service life of a box car is spent on lines of foreign railroads at recompense to the owner of \$1.75 per day, which return is the same for both the lightest and the heaviest cars. While the car is away from home a competitive railroad is obtaining the benefit of the additional investment in the lightweight car at per diem rates.

This factor is especially important to Canadian railroads which load their best cars off line in the export of high-grade commodities, such as flour and paper.

Any study of the economics of weight saving can be

quickly outdated. The factors to be considered vary so widely, due to differences in conditions between railroads, that no generalization can apply. Each railroad must be left to make its own decisions based on studies of its individual conditions and upon present-day demands that cost of equipment must be kept as low as possible, consistent with reliability, moderate maintenance expense and economic operation over long periods of time.

Personally, I think I can safely go out on a limb—a structural-steel limb, solidly reinforced with cast steel—and predict that the A.A.R. standard box car of 1960 will look very much like the box car of today. It will still appear to be simply "eight wheels and a box," but, by that time, it will be improved in many unpublicized respects, with a background of several more million dollars in research and testing. It will remain the most efficient means of land transport in the world.

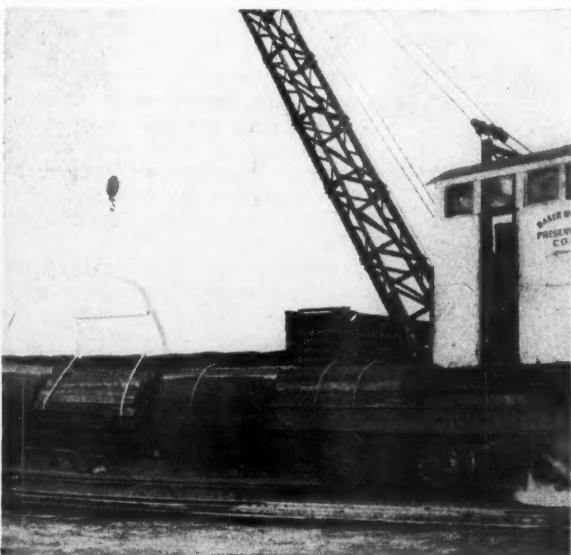
Heavy Steel Banding For Tie Handling

What is described as a new method of handling crossties has been developed by the Brainard Steel Company, Warren, Ohio. Ties are made into a unit load—at the point of production—by means of this company's new 2 in.-by-.065 in. steel strapping, so that they can be loaded on cars and unloaded with a crane, instead of by hand. As indicated in the accompanying photographs, two slings are made of this banding, allowing several feet of slack so the crane can hook to the strapping. The manufacturer states that this strapping will stand a beam load of 14,400 lb., and that with the Brainard method of seal application—which does

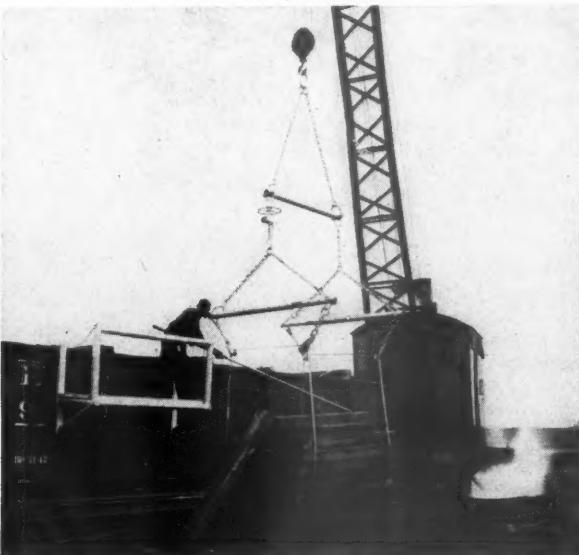
not cut the strap—95 per cent of the band strength is retained. The recommended maximum weight of any load of ties is 14,000 lb.

The manufacturer estimates that the cost of banding the ties will be between 3½ and 4¼ cents per tie, assuming that the average bundle of main-track ties includes 53 ties, while side-track and yard ties may run about 63 to a unit load. About 46 ft. of strapping and 4 seals are required per bundle. Six bundles of ties can be placed in a standard 40 ft. gondola.

The manufacturer points out that in using its strapping for handling ties as illustrated precautions should be taken that: 1. The spool by which the bands are lifted should have a radius of at least 1½ in.; 2. the band must not be stretched more at the edges than at the center; and 3. the sealed joints should always be on the bottom or sides of the unit, and never closer than 2 ft. to the lifting device.



Left—Ties unloaded from a tram or unloaded from a car for stacking need a spreader such as the one in this photo. Right—In distributing ties along the right of way, as in this photo, a double spreader such as the one above must be used. Platform from which the man is working can be home made, although Brainard furnishes specifications for a recommended one



GENERAL NEWS

Union "Unwilling" To Take Whole Labor Act

Emergency board says B. of R. T. wants benefits, not obligations

Reporting on its investigation of a dispute involving grievance cases which are within the jurisdiction of the National Railroad Adjustment Board, an emergency board has told President Truman that it was "driven to the conclusion" that the Brotherhood of Railroad Trainmen "seeks to retain the benefits of the Railway Labor Act and is unwilling to accept its remedies and obligations, procedural or otherwise, save to create a situation which compels the government to invoke the services of an emergency board." The railroad involved is the Denver & Rio Grande Western, and members of the emergency board were Chairman Robert G. Simmons, Robert O. Boyd, and Harold R. Korey.

What drove them to the conclusion noted above was the refusal of the brotherhood to agree upon any settlement procedure which would have bound it to accept the findings made. Meanwhile, the D&R.G.W. agreed to accept any of the several procedures suggested by the board. The first of these was that the board's own decision be accepted as binding. "The brotherhood," the report said, "declined and took the position that it would expect the carrier to comply with decisions favorable to the brotherhood, but that it (the brotherhood) reserved the right to accept or decline to accept any of our awards contrary to its contentions."

Other suggestions rejected by the brotherhood were that the grievances be submitted to a system board of adjustment with a neutral referee participating, the decisions to be accepted as binding on the parties; or that they be submitted to arbitration, the arbiter's award to be binding. "We finally asked the brotherhood," the board continued, "if there existed any tribunal, state or national under the Railway Labor Act or otherwise, having authority to make a binding adjudication of these grievances to which it would be willing to submit them. The brotherhood replied that it knew of no such tribunal."

Thus the board's formal recommendation was that the grievances be submitted to the Adjustment Board. There were 76 grievance cases when the board was appointed but the brotherhood withdrew five of them during the hearings, thus leaving 71 in issue. Also involved in the proceeding were other B. of R. T. demands for the assignment of additional

brakemen to freight trains performing "local service," and for additional compensation for train crews switching at the plant of the Geneva Steel Company in Geneva, Utah.

The emergency board recommended that the latter be denied. As to the demand for additional brakemen, it recommended further conferences between the parties, because it found that pre-emergency-board procedures of the Railway Labor Act had not been exhausted. "It appears," the report said, "that the proposed rule had been discussed in conference between the parties only on one occasion and for a fifteen-minute period. The carrier having declined to grant the rule as requested, the brotherhood made no effort to secure further conferences and placed the proposed rule on its strike ballot." The board concluded its report with this comment:

"The call for a strike . . . resulted in the creation of this board . . . in the language of the brotherhood they proposed to settle these issues by force of economic strength. The Congress has provided methods for the settlement of such disputes by the orderly processes of the law. At considerable expense to the nation it has created tribunals vested with power and equipped with the means to make a determination of such matters here involved. Decisions by processes of the law and not by force is the orderly American method of settling controversies between men. We have heard the parties fully as to all matters here in dispute. It is our seasoned judgment that the issues here involved may be and should be resolved within the provisions of the Railway Labor Act."

The modification was made by Amendment No. 3 to the order, and it became effective at 11:59 p.m. March 10. The amended order prohibits railroads without more than 10 day's supply of fuel coal for their coal-burning passenger locomotives from operating such locomotives in passenger service a daily mileage in excess of 75 per cent of the daily mileage operated on December 1, 1949.

Previously the order had required, without reference to coal supplies, a 50 per cent reduction in the mileage of coal burners in passenger service, while the vacated freight order (Service Order No. 847) had prohibited the railroads from operating a daily total of coal-burning freight locomotive mileage in road service in excess of 75 per cent of that operated on February 8. Amendments modifying these orders to require further cuts in both freight and passenger service were issued by the commission on March 3, but were suspended before they became effective, announcement having been made on the same day that the coal strike had been settled and that the miners would return to work on March 6.

Seizure Proceedings Halted

The announcement also halted the movement in Congress to enact legislation giving President Truman power to seize the coal mines and place them under government operation. It was on March 3 that Congress received from the President a message asking for such legislation. This week Mr. Truman sent up another message advising that the "emergency" which was the basis for that request had passed, but recommending that Congress create a commission to make a "long-range study of the coal industry with a view of finding and putting into effect the best solutions of its problems from the standpoint of the miners, the operators, and, above all, the national interest."

The further service cuts, which the I.C.C. ordered and then cancelled, would have reduced the daily mileage of coal-burning freight locomotives to 60 per cent of the February 8 basis, and the daily mileage of coal burners in passenger service to 35 per cent of the December 1, 1949, basis. These further cuts of 15 per cent each were scheduled to become effective at 11:59 p.m. March 5, but the amendments suspending them were issued on March 4, and made effective at 10 a.m. on that day.

A.R. President Faricy's announcement of the railroad's readiness to serve the reopened mines said that the Car Service Division's field forces had been instructed to "concentrate their efforts

Railroads Take Steps To Keep Coal Moving

Strike's end also ended I.C.C. restrictions on freight service

As the strike of bituminous coal miners ended on March 6, William T. Faricy, president of the Association of American Railroads, said that the rail carriers had taken steps "to speed up the movement of coal from mines to points of consumption." On the following day, the Interstate Commerce Commission removed all service-order restrictions which had required a reduction in the mileage of coal-burning freight locomotives, but it left in effect a modified version of Service Order No. 846 which applies to coal-burners in passenger service.

on obtaining maximum utilization of the approximately 600,000 coal-carrying cars." The A.A.R. president added that "inasmuch as the demands for coal cars at the mines for the next several weeks will be at an abnormally high level, everything possible will be done to expedite the movement of loaded and empty coal cars and to bring about the prompt unloading of these cars by the consignees."

The C.S.D. instructions were embodied in a March 7 circular which Vice-Chairman C. R. Megee sent to the division's district managers and car service agents. These forces were called upon to contact consignees, make on-the-ground surveys where necessary, appeal for cooperation through the car efficiency committee of the regional Shippers Advisory Boards and trade organizations for the prompt unloading of cars, and take measures for the prompt return of empty coal cars to the mines for further loading.

Cost of B.R.T.-O.R.C. Demands \$290,000,000

40-hr. week and rules plea heard by emergency board

The demands of the Order of Railway Conductors and the Brotherhood of Railroad Trainmen for a 40-hr. week for yard service employees, and important working rule changes for some 149,000 employees represented by the two unions, were presented to a Presidential fact-finding board at Chicago beginning March 2.

The employees' demands were first served on the individual carriers on March 15, 1949, shortly after which the carriers countered with proposals of their own. Concurred negotiations between the parties to the dispute ended in failure on December 14, 1949. The two brotherhoods promptly circulated a strike vote, which returned 95.5 per cent in favor of a work stoppage, and the carriers invoked the services of the National Mediation Board. The board's efforts were unproductive of a settlement and were concluded on February 14. President Truman appointed the emergency board to hear and recommend on the dispute on February 24, thereby postponing strike action for at least 60 days thereafter.

Wages Real Issue

In the carriers' opening statement on March 2, Howard Neitzert, counsel for the railroads, told the board that the unions' demands were "disguised wage demands" which "would increase railroad transportation costs over \$290 million a year." William E. B. Chase, vice president of the B.R.T., told the board that "our present dispute is not a wage controversy, but is a movement to eliminate inequities for these train and yard service men." R. O. Hughes, vice-president of the O.R.C., declared that the coun-

terproposals of the railroads would "eliminate any semblance of industrial democracy in the railroad industry and [substitute therefor] industrial dictatorship."

Issues Before the Board

The proposals of the conductors and trainmen include, briefly, the following:

- (1) A 40-hr. week for yard service employees;
- (2) That 48-hr. pay be paid for 40-hr. work;
- (3) That basic rates be increased 2½ cents an hour, eliminating the 20-cent daily earning minima wherever now applicable;
- (4) That yard service employees be paid a minimum of 8 hr. at time and one-half for work on Sundays and holidays;
- (5) That the basic daily rate for car retarder operators be determined by adding 80 cents to the basic rate for yard conductors (present differential is 32 to 47 cents);
- (6) That the standard daily rate of footboard yardmasters be increased from 40 cents in excess of the yard conductors' rate to not less than one-eighth of the daily rate;
- (7) That overtime in all passenger service be paid for on a minute basis at an hourly rate of three-tenths of the daily rates;
- (8) That trainmen handling U. S. mail be paid a mileage allowance, in

addition to regular compensation, therefor;

(9) That the rates of pay in road and yard service be graduated on the basis of the weight on drivers of the locomotive used;

(10) That road crews be paid an allowance for expenses when away from home terminal in excess of 8 hrs;

(11) (That road employees receive additional pay for initial terminal time in excess of 30 min.;

(12) That territorial wage differentials be abolished; and

(13) That the work month of dining car employees be shortened with increases in the rates of pay, the employment of additional men, and the establishment of various allowances, arbitraries and privileges.

The counter proposals of the carriers include the following:

(1) That road and yard crews be required to couple and uncouple air hose, chain and unchain cars and make air tests as a part of their work, without penalty pay;

(2) That road crews may be used to perform yard work at points where yard crews are not on duty;

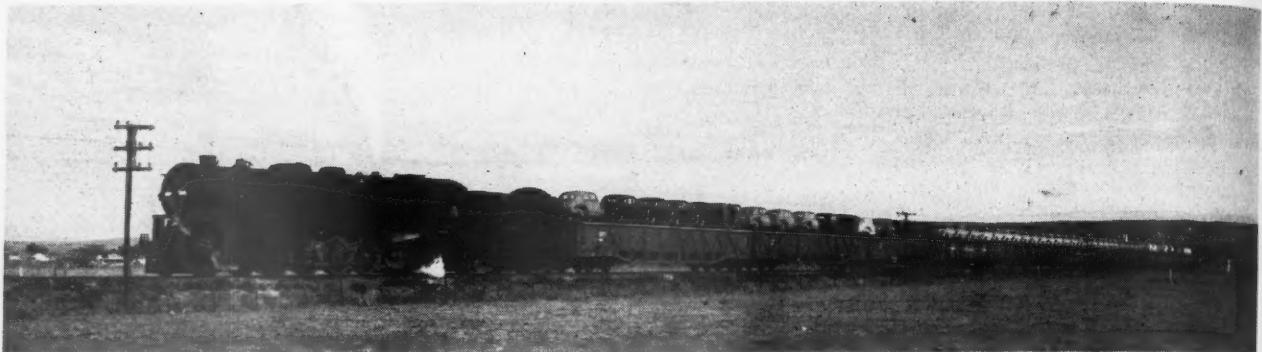
(3) That management have the right to designate switching limits;

(4) That existing rules be amended to allow performance of more than one class of service in a tour of duty, at the highest rate applicable to any class of service performed;

(5) That 200 mi. or less, 8 hr. or less,



LIMA-HAMILTON SNOW PLOW ON SOO LINE.—One of the largest and most powerful rotary snow plows ever built has gone into service on the Minneapolis, St. Paul & Sault Ste. Marie to prevent accumulation of deep snow drifts on lines in North Dakota and western Minnesota. The snow-fighting machine was built by the Lima-Hamilton Corporation and cost the Soo Line \$139,550. The overall length is nearly 90 ft., weight of tender and plow is 244 tons, and width of cut to be made by the rotary wheel is 12 ft. Height of the plow from the tracks is 16 ft. 2 in. Power for the wheel is supplied by two vertical three-cylinder steam engines, producing a total of about 1,500 hp. The tender carries 4,000 gal. of fuel oil and 10,000 gal. of water. In the photograph are (left to right): C. S. Pope, vice-president; A. G. Greenseth, general mechanical superintendent; C. F. Guggisberg, mechanical superintendent; G. A. MacNamara, president; E. F. Zelle, trustee, Wisconsin Central; and R. L. Simpson, general manager. A more detailed description of this plow and of similar units built for other western railroads was published in last week's *Railway Age*, page 44.



To facilitate monthly shipments of from 1,000 to 1,200 automobile bodies from Adelaide, Australia, to Melbourne, 480 mi., the Victorian and South Australian railways are using 35 special 70-ft. cars capable of carrying from 10 to 13 bodies each. The cars are painted bright scarlet "to remind Melbourne railroad men of the need for speedy return to Adelaide for further loading." The auto bodies, which are produced at Adelaide plants of General Motors (Holdens), Ltd., and Chrysler, Dodge, DeSoto Distributors, Ltd., are fitted to chassis at Melbourne assembly plants

constitute a basic day's work in other than short-turnaround passenger service;

(6) That road train earning guarantees be eliminated;

(7) That existing rules which prohibit reductions in passenger crews or assignments or increases in mileage in passenger service be eliminated;

(8) That 125 mi. or less, 8 hr. or less, constitute a basic day's work in through freight service;

(9) That management have the right to establish interdivisional runs and to run crews through terminals;

(10) That management have the right to pool cabooses and run them through terminals; and

(11) That management have the right to fix the time of reporting for road crews.

Switchmen's Demands Mediated

Demands of the Switchmen's Union of North America, first presented to the carriers on September 20, 1949, were placed before the National Mediation Board at Chicago on March 8 for the eastern carriers, and March 9 for the western carriers. The switchmen's demands closely parallel those of the conductors and trainmen except that they include a proposal that a night differential of 10 cents an hour be established, and that overtime be on the basis of double time instead of time and one-half.

a public hearing which pointed up demands of senators from New England and the Middle Atlantic states for representation on the commission for their sections.

It also pointed up the feeling of the committee's chairman, Senator Johnson, Democrat of Colorado, that the commission's Division 5 may be approving new-operation applications of motor carriers without adequate consideration of the prospective impact on railroads and other existing transport services with which the new trucking operations would compete. Chairman Johnson asked if the commission were alert to be sure that "we don't become overloaded with a surplus of transportation." Commissioner Mitchell pointed out that he is not a member of Division 5, but he assured the chairman that he is aware of the problem, which prompted him to dissent in a recent case involving the granting of a motor-carrier certificate by the commission.

Mr. Mitchell's appearance to answer questions of the committee members comprised the only proceedings of the hearing. His appointment was unopposed. Nevertheless, 9 of the committee's 13 members were on hand. The demand for a northerner on the commission was first voiced by Senator Brewster, Republican of Maine, and then endorsed by several of his colleagues, including Senators Myers of Pennsylvania and O'Conor of Maryland, Democrats, and Bricker of Ohio, Republican.

At one point, Senator Brewster told Senator Myers that the Democratic members of Congress from the north should have arranged for a "replacement" when the section lost its representation with the death of former Commissioner Carroll Miller of Pennsylvania. Instead of giving the north a "replacement," Mr. Brewster added, the President "went to Utah." The latter was a reference to the President's nomination of James K. Knudson for the unexpired Miller term. Mr. Knudson, a native of Utah, is an attorney on the staff of the Department of Agriculture. The committee is scheduled to consider his appointment on March 22.

Meanwhile, the term of Commissioner Clyde B. Aitchison has expired, but he is continuing to serve under that provision of the Interstate Commerce Act which leaves a sitting commissioner in office until his successor qualifies.

Senator Brewster called the present situation which leaves the "northeastern area" of the country without representation on the commission "a reflection on the Democratic representatives from that area." Mr. Brewster did not think the Republicans could be too effective in the matter, but he promised his Democratic colleagues that "we're going to roar about this, and hope that will help you gentlemen when you go to the White House."

Chairman Johnson's concern about the establishment of new trucking services was based on advices that he has received that Division 5 will grant applications for certificates "without very much care," and "without due regard to the effect on other agencies." There has been a "regular epidemic of certificates," the senator added. Commissioner Mitchell agreed that the situation, as the senator outlined it, would be a "serious" one, although he said he didn't want to criticize Division 5. He did not think "all" of the division's members were of the attitude attributed to the division by the senator.

The three commissioners now regularly assigned to Division 5 are William E. Lee, John L. Rogers and William P. Patterson.

Senator Bricker asked if Division 5 were "partial" to highway transportation, and Commissioner Mitchell replied that he didn't think the division was "antagonistic" to railroad transportation. He went on to say that the motor industry thinks the commission is "railroad-minded" and the railroads think it is "motor-minded." Mr. Bricker pressed his question to ask if it were not true that a division assigned to deal with a particular agency would tend to become "partial" to that agency. Commissioner Mitchell conceded that such a state of mind would be "natural." Chairman Johnson said he thinks the railroads

Senate Group Clears Mitchell for I. C. C.

Hearing points up demand for northerner on commission

The Senate committee on interstate and foreign commerce voted on March 8 to recommend Senate confirmation of President Truman's reappointment of Interstate Commerce Commissioner Richard F. Mitchell for a new seven-year term expiring December 31, 1956. The committee's favorable action came after

"strongly feel" that "Division 5 is prejudiced in favor of trucks."

The chairman then went on to bring up again the matter of granting certificates for new operations. It would seem, he said, that such a case should be decided by the entire commission rather than by Division 5. Commissioner Mitchell explained that the entire commission would not get into the picture unless a petition for reconsideration of the division's decision were filed.

Senator Magnuson, Democrat of Washington, discussed with the commissioner what the senator called the "perpetual problem of rates." He spoke of "indications" that carrier operating costs are decreasing, and asked if the commission were studying the situation with a view to ordering reductions in rates. Commissioner Mitchell said he did not understand that costs were decreasing. He went on to point out that there are no general rate-increase applications pending, and that the railroads are making some "quite drastic" cuts in rates to meet competition. Chairman Johnson said that the "57 per cent" rise in freight rates since the war was a "pretty big increase." The commissioner agreed, but noted that cost increases have been greater.

In other discussion with the commissioner, Senator Magnuson expressed his hope that the commission would soon bring to a close the proceedings involving alleged "rate discriminations." Presumably the senator was interested principally in the general class-rate and classification cases (Nos. 28300 and 28310), but he also referred to "combination rail-water rates," which he understands are "discriminatory" against some Atlantic and Pacific ports and "preferential" of Gulf of Mexico ports.

Meanwhile, Chairman Johnson had commended Commissioner Mitchell to the committee. He has, the chairman said, "a fine record on the commission; I know from personal experience." And Senator O'Connor emphasized that the northern group's demand for representation implied no criticism of Mr. Mitchell, about whom "all reports are favorable." Commissioner Mitchell is Iowan. He has been a member of the commission since January, 1947, when he was appointed by President Truman for the unexpired term of the late Claude R. Porter.

were approved by the Interstate Commerce Commission in three reports made public on March 6. The roads authorized to increase their commutation rates and the approximate percentage rise in each case are: Delaware, Lackawanna & Western, 16.8 per cent; Erie, 32 per cent; Pennsylvania, 22.1 per cent; New Jersey & New York, 31 to 42 per cent; Lehigh Valley, 27 per cent.

Up from 10 to 15 cents will go the H. & M.'s local fares between all stations on its lines, "which are in New York and New Jersey in the port district of New York." The fare on the N. Y. C. ferry between Weehawken, N. J., and West Forty-second street, New York, will rise from 5 to 10 cents, while the fare on the run from Weehawken to Cortlandt street, New York, will be 20 cents, as compared with present fares of 8 cents for persons 10 years of age and over and 5 cents for those between the ages of 5 and 10. Regular fares and commutation rates over rail-ferry routes will also be advanced, as will the ferry charges on various types of vehicles and animals.

Puts All Jersey Roads on Same Basis

The commutation-fare cases were disposed of by the commission in one report by Commissioner Rogers, the title case having been docketed as I. & S. No. 5585. The approved increases will put the commutation rates of the five involved roads on the same general basis as that approved early last year for the Central of New Jersey—except that rates on the steam lines of the Lackawanna will be 10 per cent lower.

The adjustment approved for the P.R.R. sanctions increases which became effective last year between New York and points on P.R.R. lines common with the Jersey Central and points on the New York & Long Branch. When it permitted these increases to become effective, the commission continued its investigation of them.

Under the new basis, the cost of a 54-trip unrestricted monthly commutation book on all lines (except the steam lines of the Lackawanna) will range from \$6.80 where the one-way commuting distance is one mile to \$19.80 at 25 miles, \$27.15 at 50 miles, and \$29.40 at 90 miles. The corresponding restricted or 46-trip monthly book will cost 10 per cent less than the foregoing. Twenty-seven-trip and weekly fares, where in effect, will be 50 and 25 per cent, respectively, of the 54-trip basis.

Increases Won't Equal Present Losses

In approving these increases, which were what the railroads proposed, the commission rejected the recommendations of a proposed report by Examiner Burton Fuller, Mr. Fuller would have given the present petitioners parity with the Jersey Central by granting them lesser increases while rescinding part of the rise granted the C.N.J. last year (see *Railway Age* of November 26, 1949, page 54). Cost studies of record, the

commission said, "disclose a loss from this [commutation] service far exceeding the estimated increased revenue from the proposed fares."

The H. & M. case was docketed as No. 30170. In approving the 15-cent fare, the commission said that this road's need of additional revenue "is scarcely open to question in view of the fact that its average railway operating income per year for the three years from 1946 to 1948, inclusive, was less than one per cent of the depreciated value of its railroad property."

In the Weehawken ferry case (No. 30178) the commission said it had before it a record indicating that the approved increases would still leave the revenue from the ferry operation insufficient to meet the deficits which are being incurred. The report identified the charge for passenger automobiles and taxicabs as the "principal" non-passenger rate involved. The new automobile and taxicab rates (which cover the vehicle, operator and passengers) will be 35 cents between Weehawken and Forty-Second street and 50 cents between Weehawken and Cortlandt street. A rate of 25 cents now applies on both routes.

Intrastate commutation fares between New Jersey points in the New York area will also be increased.

January Net Income Totaled \$11.5 Million

**Net railway operating income
for month was \$32,757,854**

Class I railroads in January had an estimated net income, after interest and rentals, of \$11,500,000 compared with \$13,000,000 in January, 1949, according to the Bureau of Railway Economics of the Association of American Railroads. The January net railway operating income, before interest and rentals, was \$32,757,854, compared with \$33,769,179 in January, 1949. For the twelve months ended January 31, the rate of return was 2.91 per cent, as compared with 4.22 per cent for the twelve months ended January 31, 1949.

Gross in January, amounting to \$657,044,390, compared with \$730,690,952 in the same month of 1949, a decrease of 10.1 per cent. Operating expenses amounted to \$546,665,008 compared with \$616,283,039, a decrease of 11.3 per cent. Forty-one Class I railroads failed to earn interest and rentals in January, 1950, of which eighteen were in the Eastern district, three in the southern region and twenty in the Western District.

Class I railroads in the Eastern district in January had an estimated net income of \$5,000,000, compared with \$13,000,000 in the same month of 1949. Those same roads in January had a net railway operating income of \$16,762,218

Lets Jersey Roads Raise Commuter Fares

H. & M. and Weehawken ferry also get increases in rates

Increases in New York-New Jersey commutation rates of five roads, in local fares of the Hudson & Manhattan, and in charges for the transportation of passengers, vehicles and property on the New York Central's Weehawken ferry

compared with \$25,511,128. Gross in the Eastern district in January totaled \$297,466,787, a decrease of 14.7 per cent compared with the same month of 1949, while operating expenses totaled \$249,390,069, a decrease of 12.5 per cent.

Class I roads in the Southern region in January had an estimated net income of \$7,000,000 compared with \$6,000,000 in the same month of 1949. Those same roads in January had a net railway operating income of \$9,930,681 compared with \$9,386,015. Gross in the Southern region in January totaled \$99,621,617, a decrease of 6.6 per cent below January, 1949, while operating expenses totaled \$77,932,596, a decrease of 9.1 per cent.

Class I roads in the Western district in January had an estimated deficit of \$500,000 compared with a deficit of \$6,000,000 in the same month of 1949. Those same roads in January had a net railway operating income of \$6,064,955, compared with a net railway operating deficit of \$1,127,964 for January, 1949. Gross in the Western district in January totaled \$259,955,986, a decrease of 5.6 per cent compared with the same month in 1949, while operating expenses totaled \$219,342,343, a decrease of 10.6 per cent.

CLASS I RAILROADS UNITED STATES

Month of January

	1950	1949
Total Operating revenues	\$657,044,390	\$730,690,952
Total Operating expenses	546,665,008	616,283,039
Operating ratio—per cent	83.20	84.34
Taxes	64,111,602	67,093,223
Net railway operating income (before charges)	32,757,854	33,769,179
Net income, after charges (estimated)	11,500,000	13,000,000

House Group Closes Transport Hearings

Car builders call for fair treatment of railroads

The subcommittee on transportation of the House interstate and foreign commerce committee concluded on March 2 and 3 its series of hearings on the national transportation picture. These two days were given over to presentations with respect to water carriers, the motor carrier industry, and shipper groups. As reported in *Railway Age* of last week, the subcommittee, headed by Representative Beckworth, Democrat of Texas, had scheduled a five-day series of hearings. The first three days were devoted to a study of air, rail, and motor transportation.

As the hearings proceeded a number of statements were filed with the subcommittee by groups interested in various phases of transportation. Among these was a statement by Samuel M. Felton, president of the American Railway Car Institute, who declared that American railroads have not been given a "fair play" basis on which to operate. Mr.



An urgent plea for wider understanding of government by business was the theme of the second annual lecture under auspices of the Edward G. Budd Foundation at Philadelphia's Franklin Institute. The lecture was delivered by William L. Batt, president of SKF Industries, Inc., shown, right, above, with Edward G. Budd, Jr., son of the foundation's founder, and present president of the Budd Company

Felton reviewed the relationship between the car building companies, which comprise the institute, and the railroads—"the keystone of our whole transportation structure." He said the railroads "stand alone as the only form of public transportation which is not, in one way or another—directly or indirectly—subsidized by taxpayers' money."

Urge "Single Commission, Definite Policy"

As recommendations to the subcommittee, Mr. Felton urged creation of a single federal regulatory commission in transportation to help unify government thinking on the subject, and said that Congress should simultaneously "lay down a definite policy on regulation" designed to equalize the nature of regulation between carriers and eliminate "needless" regulation. He added that the whole question of government aid for competing transportation agencies should be thoroughly reviewed by congress, and that the "tendency to interfere with the authority of the railroads in operational and administrative functions" should be eliminated.

The statement said also that the A.R.C.I., in asking "fair play" for railroads, did not mean "hamstringing the railroads' competition." Other forms of transportation have a valid place in the national picture, Mr. Felton said, but he urged that competition be allowed to set the extent of service each will perform.

Turning from its survey of the railroad situation, the Beckworth subcommittee's first witness on March 2 was Interstate Commerce Commissioner Charles D. Mahaffie who made a presentation on domestic water transportation. The commissioner told the subcommittee that "the great preponderance of domestic water traffic is not subject to the commission's

jurisdiction" either because of "exemption provisions" or because the transportation is private in nature. He said that 319 water carriers hold operating authorities from the I.C.C. at present, but that 75 of these are not in operation.

More Help for Water Carriers

In examining causes for post-war economic difficulties of water carriers, Commissioner Mahaffie said the troubles were caused in part by costs that advanced "relatively more than did the costs of their competitors" and by "keen railroad competition." He added that the I.C.C. has given water carriers "considerable relief" from the pressure of railroad rates by removing some of the fourth-section relief granted the railroads when water carriers had a cost advantage. However, the commissioner continued, the commission cannot by rate adjustments "solve a problem which at this time is largely a result of the high costs of certain groups of water carriers." He then cited examples of where the water carriers are striving to reduce costs, particularly terminal handling operations, by use of new equipment and handling devices. He said more modern port facilities are needed in some places and added that the "strong rivalry that exists among ports" doubtless will lead to provision of additional well adapted facilities by local government agencies.

Among other witnesses making presentations with respect to water carriers were South Trimble, Jr., chairman of the advisory board, Inland Waterways Corporation, and Chester C. Thompson, president of the American Waterways Operators. Mr. Thompson, who said that water transportation has made "important progress" in the past two years, also discussed the "serious competitive difficulties" between rail and water carriers. He said the railroads hope to establish "a monopoly of all transport services in the United States" and are "engaged in a campaign that is presently reaching a high intensity" to extinguish domestic water transportation. He went on to say that railroads reduce rates on traffic susceptible to water transportation, and that, in asking general rate increases, the roads have "requested and received" permission to apply only nominal increases on commodities adaptable to movement by barge lines.

Mr. Thompson claimed the railroads have dissipated "a substantial portion" of their post-war general freight rate increases by making "competitive" rate reductions. "Surely no industry so closely allied with the national safety and well-being should be permitted to operate in this flagrant fashion," he said, adding that if such "unrelenting attacks" against the water transport services continue they will destroy "a system of transportation that has proved its worth and value, in peace and in war." Mr. Thompson concluded his testimony by recommending that no expansion or rehabilitation be made in the Federal Barge Lines and that restrictions be removed that presently "prevent the sale

or lease of that government-owned enterprise to private capital."

Mr. Trimble of the I.W.C., who preceded Mr. Thompson as a witness, had taken an opposite view of that government enterprise, urging Congress to appropriate money for an extensive rehabilitation program. In reply to questions by members of the committee, Mr. Trimble said he believed \$10,000,000 should be spent on new equipment and facilities, thereby making the barge line more economical and efficient and thus an attractive proposition for private (Continued on page 111)

Freight Car Loadings

Loadings of revenue freight in the week ended March 4 totaled 574,395 cars, the Association of American Railroads announced on March 9. This was an increase of 27,604 cars, or 5 per cent, over the previous week, a decline of 131,157 cars, or 18.6 per cent below the corresponding week last year, and a drop of 217,589 cars, or 27.5 per cent, under the equivalent 1948 week.

Loadings of revenue freight for the week ended February 25 totaled 546,791 cars, and the summary for that week as compiled by the Car Service Division, A.A.R., follows:

REVENUE FREIGHT CAR LOADINGS For the week ended Saturday, February 25			
District	1950	1949	1948
Eastern	100,574	131,753	156,867
Allegheny	108,675	147,387	169,558
Pocahontas	21,485	56,826	69,874
Southern	106,980	120,107	138,462
Northwestern	65,595	72,315	75,209
Central Western	91,182	104,620	117,379
Southwestern	52,300	55,120	63,561
Total Western Districts	209,077	232,055	256,149
Total All Roads	546,791	688,128	790,910
Commodities:			
Grain and grain products	39,144	39,699	33,139
Livestock	7,169	8,604	8,447
Cool	51,980	145,665	191,763
Coke	9,643	15,054	14,894
Forest products	37,578	35,304	44,654
Ore	9,146	14,346	13,993
Merchandise, l.c.l.	72,574	86,092	109,020
Miscellaneous	319,557	343,364	375,000
February 25	546,791	688,128	790,910
February 18	560,116	697,335	804,937
February 11	568,841	699,442	733,870
February 4	612,524	682,143	746,936
January 28	636,415	679,302	726,345
Cumulative total 8 weeks	4,681,602	5,611,559	6,213,255

In Canada.—Carloadings for the week ended February 25 totaled 70,058 cars, compared with 71,675 cars for the previous week, and 73,224 cars for the corresponding week last week, according to the compilation of the Dominion Bureau of Statistics.

Total for Canada:	Revenue Cars	Total Cars Rec'd from Connections
February 25, 1950	70,058	26,693
February 26, 1949	73,224	32,340
Cumulative totals for Canada:		
February 25, 1950	528,889	223,277
February 26, 1949	577,393	255,551

St. Louis Terminal Dispute Goes to Emergency Board

President Truman has created an emergency board to investigate a dispute between the Terminal Railroad Association of St. Louis and those of its em-

ployees who are represented by the Brotherhoods of Locomotive Engineers and of Locomotive Firemen & Engineers.

The dispute involves the employees' demand for a differential of 56 cents per day above the national scale for yard-service employees. They formerly had such a differential but it was absorbed by adjustments made in connection with the nationwide increases granted to operating employees in 1948.

Ops Threaten Strike On New York Central

Leaders of four operating brotherhoods have threatened to call a strike in the near future on New York Central lines east of Buffalo, N. Y., the railroad has announced. "The dispute hinges entirely on conflicting interpretations of the scope of an award made by the National Railway Adjustment Board's first division," said L. W. Horning, the Central's vice-president, personnel and public relations. "The board's ruling, made April 22, 1948, concerned claims of road crews for an additional day's pay at yard rates, for setting off cars at our North Bergen, N. J., yard, and we already have paid employees approximately \$200,000 under this award."

"After the ruling, however, additional retroactive claims, extending to train movements performed as long ago as 1939, were filed," Mr. Horning added. "These new claims seek to stretch the board's ruling to cover other operating movements which were not a part of the claims before the board. Leaders of the only two operating unions concerned with the case—the Brotherhood of Railroad Trainmen and the Brotherhood of

Locomotive Firemen & Enginemen—are interpreting the board's ruling to cover a much broader scope than we believe the board intended. Under procedures set forth in the Railway Labor Act, we have formally requested the board to clarify its ruling, but the union leaders have refused to await such clarification and have begun instead the formality of taking a perfunctory strike vote among their members."

The two operating unions not concerned with the case, but supporting the others as a matter of union unanimity, the Central said, are the Brotherhood of Locomotive Engineers and the Order of Railway Conductors.

Additional General News, Car Service Notes, and Organization News appear on pages 111 through 117.

SUPPLY TRADE

Westinghouse Air Brake Net \$9,968,145 in 1949

Net income of the Westinghouse Air Brake Company last year was \$9,968,145, equal to \$3.14 a share, compared with \$15,875,193, equal to \$5 a share in 1948, according to the firm's annual report. Included in 1949 earnings is \$2,510,286 of income received from sources other than manufacturing, the report added, compared with \$2,826,247 received from



A new series of New York Central television spot announcements—"Minute Melodramas"—is now being telecast by New York City stations. Filmed in the "Gay Nineties" tradition, with sets, costumes, props and sound effects in keeping with that period, the one-minute spots are built around the theme "It's Not a Fit Night Out for Car or Plane." A series of three spots, produced under the direction of Foote, Cone & Belding, New York advertising agency, at Caravel Film Studios in Hempstead, N. Y., are being used on a 52-week basis, six times a week over WABD, WCBS-TV, WPIX and WJZ-TV.

similar sources in the preceding year. Net sales for the year were \$76,056,685, compared with \$89,938,311.

"The curtailment of buying of new cars in 1949 . . . very materially decreased the volume of new orders . . . during the year," A. N. Williams, president, said in the report, "so that a very substantial reduction took place in the backlog of unshipped orders at the end of the year as compared with the previous year end. However, locomotive sets now on order and in prospect, and anticipated purchases of new freight cars by the railroads, give promise of a reasonable volume of air brake orders in 1950, but it is not expected that shipments will reach the volume of 1949. It is believed that the demand for signaling equipment will be sustained in 1950, as the railroads of the United States continue their extension and modernization programs in the signaling field."

Budd 1949 Sales and Profits Highest in Company's History

The largest sales and profits in its 37-year history were announced by the Budd Company in its annual report for 1949. Total sales during 1949 were \$266,633,612 and net profits were \$15,038,115. In 1948 Budd earned \$9,329,864 on sales of \$219,583,651. The profit per share in 1949 was \$4.12, compared with \$2.48 in the preceding year.

"In our railway division," Edward G. Budd, Jr., president, said in the report, "we completed 322 cars during 1949, compared with 197 in the preceding year. Increase in both the rate and efficiency of production was accompanied by a gradual lowering of cost sufficient to yield a profit on certain orders, although the division as a whole did not earn a profit for the year."

Fairbanks, Morse Reports 1949 Sales of \$77,650,060

Net sales of Fairbanks, Morse & Co. and subsidiaries in 1949 amounted to \$77,650,060, compared with \$98,705,859 in the preceding year, according to the recently released annual report. Net profit was \$3,416,427 (including a non-recurring profit of \$1,137,890), equal to \$5.70 a share, compared with \$5,752,112, equal to \$9.59 a share. The non-recurring profit resulted from the sale of most of the properties of the Inland Utilities Company, a wholly owned subsidiary which has operated electric generating plants in a number of small towns in Kansas, New Mexico and Colorado.

American Brake Shoe Sales Were \$91,734,580 Last Year

Sales of the American Brake Shoe Company totaled \$91,734,580 during 1949, William B. Given, Jr., president, said in the annual report issued to stockholders this week. In 1948 sales amounted to \$120,190,784, the highest in the company's history. Net earnings last

year were \$3,987,844, equal, after preferred dividends, to \$3.22 a common share, compared with \$5,184,317, or \$4.42 a common share. Unfilled orders at the end of the year were \$13,400,000, compared with \$30,871,000 at the end of 1948.

"An important part of the decrease in shipments resulted from excess customer inventories," said Mr. Given. "We estimate that it was not until the last quarter of the year that orders reflected current customer use of our products. Reduced coal production, the steel strike and curtailed railroad operations seriously reduced orders and thereby shipments. Approximately 54 per cent of the shipments was railway supply materials, compared with 59 per cent in 1948."

G. F. Maughmer, formerly manager of the Los Angeles, Cal., sales office of the General Electric Company, has been appointed to head a new apparatus sales district, twelfth in the firm's apparatus department sales system. The new district, with headquarters at St. Louis, Mo., consists of all sales areas presently in the company's St. Louis, Kansas City, Mo., and Omaha, Neb., territories, and includes company offices at Sioux City, Iowa; Lincoln, Neb.; Wichita, Kan.; Springfield, Ill.; Memphis, Tenn.; and Little Rock, Ark.



G. F. Maughmer

Mr. Maughmer was graduated from Washington State College with a degree in electrical engineering, after which he joined the test engineering program of G. E. at Schenectady, N. Y. Following an assignment as a sales engineer at Phoenix, Ariz., he was transferred to Los Angeles in 1932, as co-ordinator of company activities on construction of the Colorado River aqueduct. He returned to Phoenix in 1939 as manager of that office and was transferred to San Francisco in 1943, where he served in an executive capacity. Mr. Maughmer was appointed assistant manager of the Los Angeles office in 1945 and manager in 1947.

Nelson Equipment Distributors, 913 Roosevelt building, Indianapolis, Ind., have been appointed sales representa-

tive for the Automatic Transportation Company, Chicago. The firm will handle sales of Automatic's full line of Skylift and Transporter electric industrial trucks in Indiana, except for Porter, La Porte and Lake counties.

J. B. Hull has been appointed Pacific district manager of the Westinghouse Air Brake Company, succeeding V. Villette, retired. Mr. Hull joined the company's home office at Wilmerding, Pa., in 1920, as a special engineer. After serving in



J. B. Hull

several engineering capacities, he was transferred to the San Francisco, Cal., office in 1929 as assistant district engineer, advancing to district engineer in 1935. He was appointed assistant manager in 1947, the position he held at the time of his recent appointment.



V. Villette

Mr. Villette joined the San Francisco office of the company in 1917 as a mechanical expert, after having served on western railroads as machinist and locomotive engineer. His entire Air Brake career was spent in the Pacific district, where he advanced to representative in 1922 and to district manager in 1929.

The Whiting Corporation, Harvey, Ill., has appointed the following four new electric hoist distributors: Wisner, Inc.,

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Rockford, Ill.; **Neff Equipment Company**, Toledo, Ohio; **Stone Supply Company**, Houston, Tex.; and **Barton Sales Company**, Fort Wayne, Ind. Barton has also been appointed as a distributor for Whiting's Trambeam overhead crane and monorail systems.

M. Russell Kambach, formerly assistant advertising manager of the **Aluminum Company of America**, has been appointed advertising manager, and **J. M. Sharp**, of the advertising department, has been appointed to succeed him. The company also has appointed **John M. Mitchell** as manager of its export division, with headquarters at Pittsburgh, Pa., and **G. B. D. Peterson** as head of the division's New York office. Mr. Mitchell was formerly in charge of Alcoa sales in Mexico and Mr. Peterson was sales representative in York, Pa. A new division for rolling of magnesium sheet will be established at New Kensington, Pa., in the near future.

Frank G. Penl has been appointed to direct sales of transportation finishes for the **McDougall-Butler Company**, paint manufacturers of Buffalo, N. Y. Mr.



Frank G. Penl

Penl has been identified with the paint industry for 24 years, many of which have been devoted to sales in the transit industry.

The American Brakebloc division of the **American Brake Shoe Company** has appointed **Donald K. Rennie**, former superintendent at the Winchester, Va., plant, as works manager of the division, with headquarters at Detroit, Mich., and **James W. Green, Jr.**, to succeed Mr. Rennie at Winchester. American Brake Shoe also has consolidated all operations of its Canadian subsidiaries into one corporation, the **Dominion Brake Shoe Company, Ltd.**, a wholly owned subsidiary, with headquarters at 1405 Peel street, Montreal, Que. The operating assets and business of Joliette Steel Limited and Ramapo of Canada, Ltd., were acquired by Dominion Brake Shoe. With this consolidation, Dominion Brake Shoe will operate all Canadian plants of the parent company through five divisions —

Brake shoe, Joliette steel, Canadian Ramapo, American Brakebloc and Kellogg.

R. P. Jackson, vice-president and district manager of the wood preserving division of **Koppers Company**, at Texarkana, Tex., has been appointed Chicago district manager, retaining his position as vice-president in addition to his new duties. Succeeding Mr. Jackson as manager of the Texarkana district is **C. F. Seyer**, formerly sub-district manager at Houston, Tex. **J. W. Sullivan**, sales representative at Houston, succeeds Mr. Seyer. As district managers at Chicago and Texarkana, Messrs. Jackson and

that plant in 1944, and, in 1946, joined the railroad sales division at Pittsburgh, Pa., as a product representative. In 1947, Mr. Claypoole was appointed assistant to manager, the position he held at the time of his present appointment.

EQUIPMENT AND SUPPLIES

FREIGHT CARS

2,046 Freight Cars Delivered in February

Freight-train cars delivered for domestic use in February totaled 2,046, including 1,129 delivered by railroad shops, compared with January deliveries of 2,395 cars, which included 1,389 delivered by railroad shops, the American Railway Car Institute has announced. February deliveries included 313 box cars, 524 hopper cars, 722 flat cars, 251 gondola cars, 41 refrigerator cars, 90 tank cars and 55 cars of other types.

Freight-train cars ordered last month for domestic use numbered 9,075, including 5,300 ordered from railroad shops, compared with January orders for 9,385, of which 4,329 were ordered from railroad shops, the institute said. The backlog of cars on order on March 1 was 26,055, including 15,387 on order from railroad shops, compared with 19,026 cars on order on February 1, 1950, and 85,976 on order on March 1, 1949.

The **Chicago, Burlington & Quincy** has ordered 1,900 50-ton box cars, 600 70-ton triple hopper cars and 200 70-ton hopper cars from its Lincoln, Neb., shops. Five hundred of the box cars will be divided equally between the Colorado & Southern and the Fort Worth & Denver City. The other cars are all for the Burlington. An inquiry by this road for 250 to 2,500 50-ton box cars and 600 70-ton hopper cars was reported in *Railway Age* of February 11, page 62. This order, except the 500 box cars for the Burlington's subsidiaries, confirms the order for 1,400 box and 800 hopper cars tentatively placed with the railroad's shops last December.

The **Lehigh Valley** has ordered 100 70-ton covered hopper cars from the Bethlehem Steel Company and 50 70-ton flat cars from its own Packerton, Pa., shops. The hoppers, which are to be equipped with eight roof hatches, are scheduled for delivery during May.

The **Minneapolis, St. Paul & Sault Ste. Marie** has ordered 75 70-ton hopper cars from its own shops. Twenty-five of the cars are for the Wisconsin Central.

The **Missouri-Kansas-Texas** has ordered 500 40-1/2 ft. 50-ton box cars from the American Car & Foundry Co. The cars,



R. P. Jackson

Seyer will be in charge of plants, procurement, and sales in those areas. A native of Detroit, Mich., Mr. Jackson received his education in that city, specializing in business administration and accounting. He joined Koppers in 1918 as a traveling auditor and chief clerk for Koppers Construction Company (subsidiary of Koppers Company). Following service as chief accountant for another Koppers subsidiary in 1931 he became assistant treasurer of the Ayer and Lord division of Koppers (now part of the wood preserving division). Mr. Jackson has served as a vice-president since 1935.

George R. Johnson, associate editor of *Railway Age* for the past 3 1/2 years, with headquarters at Chicago, has resigned from that position to join the advertising firm of Doremus & Co., also at Chicago. Mr. Johnson is succeeded by **Arthur M. Cox, Jr.**, recently associated with the Pennsylvania and formerly with the Chicago North Shore & Milwaukee and the Chicago Union Station Company.

Richard W. Claypoole has been appointed assistant manager of sales, railroad materials and commercial forgings division of the **Carnegie-Illinois Steel Corporation**, a **United States Steel Corporation** subsidiary. Mr. Claypoole joined the Duquesne works of Carnegie-Illinois as a metallurgical observer in 1933 and the following year transferred to the Edgar Thomson works in the same capacity. He was appointed chief metallurgist at

to cost about \$2,500,000, are scheduled to be delivered during the second quarter of this year.

The Missouri Pacific has ordered 100 70-ton hopper cars from its own shops for use on the Missouri-Illinois.

The Norfolk & Western has ordered 1,000 70-ton steel hopper cars from its shops in Portsmouth, Ohio.

The Northern Pacific has ordered 500 50-ton box cars and 50 caboose cars from its own shops. Inquiry for this equipment was reported in *Railway Age* of February 4, page 67.

The Western Fruit Express Company has ordered 50 50-ft. refrigerator cars with 70-ton trucks to be built this spring in its own shops.

The Wilson Car Lines have ordered 100 40-ton, steel-framed refrigerator cars from the company's shops. Delivery is scheduled for February, 1951.

PASSENGER CARS

The Chicago & North Western has ordered three rail Diesel cars from the Budd Company. Two of the units will be the 90-passenger RDC-1; the third, designated RDC-2, has seating space for 71 passengers and a 17-ft. baggage compartment. The cars, scheduled for April delivery, will be operated in suburban service within the Chicago area. The pilot model of the RDC was tested in trial revenue service on the C. & N. W. recently, and is now being operated in test runs on the Chicago & Eastern Illinois. R. L. Williams, president of the C. & N. W., said the new cars, which cost a total of \$415,000, will be operated in trains of 2 or 3 units in periods of off-peak traffic.

LOCOMOTIVES

The Erie has ordered seven Diesel-electric locomotive units costing \$1,020,000. The Electro-Motive Division of General Motors Corporation will build two 1,500-hp. road-switching units and one 1,000-hp. yard-switching unit. Four 1,500-hp. road-switching units were divided equally between the Baldwin Locomotive Works and American Locomotive-General Electric Companies. The new units, delivery of which will begin within 3 months, will be assigned to service in the Mahoning division territory comprising Cleveland, Ohio, Meadville and Kent; the Niles and Lisbon branch, Corning and Newberry Junction run, and in the Newark, N. J., area.

SIGNALING

The Baltimore & Ohio has ordered material from the General Railway Signal Company for installation of a type K, two-wire, coded remote control system at Curtis Bay, Md. The control machine, to be located at Halethorpe, Md., will have

a 15-in. by 17-in. panel equipped with 11 track indication lamps and 6 levers for control of 3 switch machines, 2 spring switches and 8 signals. Model 5D switch machines, type K relays, model 7 switch circuit controllers, and type U color position light signals will be used.

Fairbanks, Morse & Company has ordered from the General Railway Signal Company four sets of intermittent inductive train control equipment, to be installed on Diesel-electric freight locomotives for the New York Central.

The Fort Dodge, Des Moines & Southern has ordered equipment from the General Railway Signal Company for installation of an automatic interlocking at Fort Dodge, Ia., for control of a crossing with the Chicago Great Western. Model 7 switch circuit controllers and type SA signals will be used.

CONSTRUCTION

Chicago, Rock Island & Pacific.—Division 4 of the I.C.C. has authorized this road to construct approximately 3.9 mi. of new line between Sandown, Colo., and a connection with the Northwestern Terminal lines at Denver. In addition, the Rock Island is authorized to acquire trackage rights over 5.6 mi. of Terminal Company and Denver & Rio Grande Western lines in Denver. The combination of new line plus the trackage rights will create a route for Rock Island freight trains to and from the new D.R.G.W. yards in north Denver, and will give the former road a direct route for its road-haul trains under their own power from Sandown to the new terminal. The Rock Island has no terminal facilities of its own at Denver and under an arrangement dating from 1928 the D.R.G.W. has handled all of that road's freighthouse, industry, and interchange switching inside the city. The commission's report said the new arrangement is expected to reduce delays at Denver "which in the past have been a competitive disadvantage to the Rock Island." The latter road will now handle its own trains and do its own switching, but will not service industries located on the joint tracks. The 1928 agreement relating to the use of D.R.G.W. facilities by the Rock Island has been amended to cover the new arrangement and is extended to December 31, 1976.

McCloud River.—This road is asking for I.C.C. authority to construct 5.3 mi. of track between Bartle, Cal., and a proposed station designated as Curtis, to serve logging operations in the area. At the same time, the road is seeking authority to abandon 11.4 mi. of branch line, and to acquire trackage rights over 7.97 mi. of a logging spur of the McCloud River Lumber Company between Curtis and Ponda Upper Yard. The

abandonment and trackage rights arrangement, together with the new construction, will enable the road to shorten its log haul by some 13.2 mi., according to the application filed with the I.C.C. For its use of the lumber company spur, the McCloud River will pay a car-mileage proportion of the cost of maintaining the line. The branch line to be abandoned formerly served a timber area that now has been cut over.

New York, Susquehanna & Western-Pennsylvania.—See Financial column.

Northern Pacific.—This road has awarded contracts in connection with construction of a new power plant at its roundhouse terminals in Minneapolis, Minn., at a cost of approximately \$350,000. General construction work will be done by the Steenberg Construction Company, St. Paul, Minn. The contract for piping and mechanical work and changes to present facilities has been awarded to Reuben L. Anderson, Inc., St. Paul, while boilers and stokers are to be supplied by the William Brothers Boiler & Manufacturing Co., Minneapolis. The main building will be of reinforced concrete, 45 ft. by 70 ft., and 35 ft. high.

Texas & New Orleans.—Examiner Robert Romero has recommended that the I.C.C.'s Division 4 deny this road's application to construct a branch line of approximately 4.5 mi. in Victoria County, Tex. The proposed branch would serve a chemical plant being constructed on the Guadalupe River by E. I. du Pont de Nemours & Company. The plant site already is served by the Missouri Pacific, and Examiner Romero said this road could provide adequate service. He dismissed as "too remote to deserve serious consideration" the T.&N.O. contention that the area around the duPont plant will undergo industrial development "in the not too distant future."

ABANDONMENTS

McCloud River.—See Construction column.

Virginia & Truckee.—Examiner Paul C. Albus has recommended that Division 4 of the I.C.C. authorize this road to abandon its entire line, approximately 46.5 mi., between Reno, Nev., and Minden. The examiner, noting that a hard-surfaced highway "closely parallels the line for its entire length," said that shippers "seem to have been highly successful" in their quest for substitute transport facilities. The Nevada Public Service Commission already has authorized the road to abandon intrastate operations on 60 days' notice. Witnesses appearing on behalf of the road described the V.&T. as being in a "dilapidated state of maintenance," and while Examiner

Albus said the road's case might be "overstated" in this respect, he found that prospective traffic would not warrant expenditures reasonably necessary for rehabilitation. The road has operated at an average deficit of \$21,414 a year since 1928, the examiner said, despite the fact that from 1939 to 1946 it had the lowest operating expense per mile of line of any railroad of approximately the same length in Western territory.

Division 4 of the Interstate Commerce Commission has authorized:

Cumberland & Pennsylvania.—To abandon its Midlothian branch, 1.2 mi., in Allegany County, Md. The line formerly served coal mines which are now depleted.

Lehigh Valley.—To abandon approximately 1 mi. of track at the end of the Slatedale branch in Lehigh County, Pa. The Reading formerly operated passenger trains over this line under trackage rights, but such operation was discontinued in November, 1949, and the line has not been used since.

Spokane, Portland & Seattle.—To abandon 0.8 mi. of branch line between Hammond, Ore., and Fort Stevens. The line was built to serve the military post, which has been abandoned.

FINANCIAL

Central of Georgia.—*Acquisition of Savannah & Atlanta.*—Discussions between officials of these companies, looking to the acquisition of the S.&A. by the C. of G., are under way. The proposed purchase includes 2,000 acres of industrial and residential property near Savannah, Ga., suitable for industries seeking a coastal location. Plans call for independent operation of the S.&A., continuance of prevailing routes and rate structures "and vigorous pursuance of competitive effort as has been the case in the past."

Chicago, Rock Island & Pacific.—*Trackage Rights.*—See Construction column.

Des Moines & Central Iowa.—*Reorganization Expenses.*—Division 4 of the I.C.C. has approved payment of \$5,978.77 to M. H. Snerson for expenses incurred while serving as reorganization manager of this road; but it has denied Mr. Snerson's request for an additional \$4,590 for his services in connection with the reorganization. Paul Ahlers, counsel for the reorganization manager, was allowed \$7,516.07 in salary and expenses.

Lehigh Valley.—*Extension of Bonds.*—The I.C.C. has authorized this road to extend to June 1, 1968, its first mortgage 4 per cent bonds due June 1, 1950. There are \$4,983,000 of the bonds outstanding, with the public holding \$8,000 of them. The remaining \$4,975,000 are held by the Consolidated Real Estate Company, a subsidiary of the L.V. (See *Railway*

Age of February 18, page 73.) The extended bonds will "provide an excellent financing medium in case of a sudden future need for a limited amount of funds," the I.C.C. report said.

McCloud River.—*Trackage Rights.*—See Construction column.

New York, Susquehanna & Western-Pennsylvania.—*Construction of Viaduct.*—These roads have applied to the I.C.C. for permission to construct an interchange track, the so-called Croxton viaduct, between the N.Y.S.&W. lines and the lines of the United New Jersey Railroad & Canal Co., a P.R.R. lessor, in Jersey City, N.J. Pursuant to an agreement between these roads dated November 4, 1948, the N.Y.S.&W. will construct the new track, and upon completion of the construction the P.R.R. will operate and maintain it. The track will follow the right-of-way of an interchange line that was removed a number of years ago when the N.Y.S.&W. was under control of the Erie.

To finance the construction the Susquehanna is asking the I.C.C. for authority to issue \$1,200,000 in trustee's certificates. These certificates would be dated January 1, bear interest at 4 per cent, and mature in 20 annual installments of \$60,000 each, beginning in 1951. The Fidelity Mutual Life Insurance Company has agreed to purchase the certificates, provided the commission will exempt the issue from competitive bidding requirements. At the same time the P.R.R. has asked the I.C.C. for authority to assume liability for the certificates. The latter road would pay the interest and principal installments from year to year, and upon retirement of the debt the title of the interchange track will pass to the P.R.R. or its nominee.

Under the agreement between the Susquehanna and the Pennsylvania, the latter would acquire trackage rights over the connecting line. In its application the P.R.R. said the construction and trackage rights arrangement would result in savings estimated at \$145,800 a year, as well as speeding up interchange between the two roads. At present cars moving between the two roads are handled through the Erie's Croxton yard, and it was stated that the additional handling now requires from one to three days.

Pecos Valley Southern.—*R.F.C. Loan.*—Division 4 of the I.C.C. has approved a plan under which this road will borrow \$150,000 from the Reconstruction Finance Corporation. Proceeds of the loan, which is to be repaid at the rate of \$15,000 a year for 10 years, will be used to build a storeroom-enginehouse building, purchase a new caboose, and improve bridges and track. As security for the loan the Pecos Valley will execute and deliver to the R.F.C. a first mortgage on all its property. The commission also specified that the note evidencing the loan should be guaranteed by all three members of the partnership

owning the road — F. M. Reeves, Henry Reeves, and Felix Reeves.

Railway Express Agency.—*New Director.*—Robert J. Fletcher, general counsel of the Boston & Maine, has been elected to this organization's board of directors to fill the unexpired term of Laurence F. Whittemore, resigned.

Southern.—*Purchase of Buffalo, Union-Carolina.*—The I.C.C. has postponed the effective date of its December 2, 1949, order which authorized this road to purchase for \$100,000 a 4.6 mi. segment of the Buffalo, Union-Carolina. (See *Railway Age* of December 17, 1949, page 76). The latter road filed a petition asking that it be allowed to place in the record a "stipulation of facts" agreed upon by itself and the Southern, and also asking the commission to reconsider and withdraw the condition that the purchase price of the segment be \$100,000. The two roads had formerly agreed upon a purchase price of \$150,000.

New Securities

Application has been filed with the Interstate Commerce Commission by:

Chesapeake & Ohio.—To assume liability for \$5,070,000 of equipment trust certificates to finance in part the following Diesel-electric locomotives and passenger cars:

Description and Builder	Estimated Unit Cost
1,200-hp. switching (Electro-Motive Division, General Motors Corporation)	\$100,760
4 1,500-hp. road switching (Electro-Motive)	154,711
2 2,400-hp. transfer (Electro-Motive)	203,000
18 Passenger coaches (Pullman-Standard Car Manufacturing Company)	121,100
18 Sleeping cars (6 bedrooms, 10 roomettes) (Pullman-Standard)	146,250
1 Parlor car (Pullman-Standard)	136,000
2 Sleeping cars (5 double bedrooms, buffet and observation lounge) (Pullman-Standard)	150,120

The application estimated total cost of the equipment at \$6,374,144. The certificates, to be dated April 1, would mature in 30 semiannual installments of \$169,000 each, beginning October 1, 1950, and would be sold by competitive bids.

Average Prices Stocks & Bonds

	Mar.	Prev.	Last
	7	week	year
Average price of 20 representative railway stocks	42.75	42.48	39.73
Average price of 20 representative railway bonds	92.60	92.49	87.60

Dividends Declared

Atchison, Topeka & Santa Fe.—\$1.50, quarterly, payable June 1 to holders of record April 28.

Atlanta & Charlotte Air Line.—\$4.50, semi-annual, payable March 1 to holders of record February 20.

Chesapeake & Ohio.—3 1/2% preferred, 87 1/2¢, quarterly, payable May 1 to holders of record April 7.

Chicago South Shore & South Bend.—25¢, quarterly, payable March 15 to holders of record March 6.

Delaware, Lackawanna & Western.—25¢, payable April 1 to holders of record March 15.

Denver & Rio Grande Western.—common, \$1.00; 5% preferred, \$5.00; both payable March 15 to holders of record March 8.

Maine Central.—6% prior preferred, \$1.50, quarterly, payable April 1 to holders of record March 24.

Pennsylvania.—50¢, payable April 12 to holders of record March 20.
Pittsburgh, Fort Wayne & Chicago.—common, \$1.75, quarterly; 7% preferred, \$1.75, quarterly; both payable April 1 to holders of record March 10.

Reading.—4% 2nd preferred, 50¢, quarterly, payable April 13 to holders of record March 23.

United N. J. R.R. & Canal.—\$2.50, quarterly, payable April 10 to holders of record March 20.

RAILWAY OFFICERS

EXECUTIVE

F. E. Short, vice-president and general manager of the Alabama, Tennessee & Northern at Mobile, Ala., has been appointed vice-president in charge of operations at that point.

John S. Marshall, general attorney of the Chesapeake & Ohio, has been appointed assistant to executive officers, reporting directly to the president, with headquarters as before at Cleveland, Ohio. Mr. Marshall, who is 39 years old, was graduated from John Marshall high



John S. Marshall

school, Richmond, Va., in 1928, the University of Michigan in 1932 and Harvard Law School in 1935. After practicing law in Los Angeles, Cal., he joined the C.&O.'s law department at Cleveland in 1939. He has been a general attorney for the past two years.

Henry E. Peele has been elected chairman of the Hudson & Manhattan, replacing **Joseph J. Cummins**. **John W. Campbell** has been named vice-chairman and chairman of the executive committee.

Arthur M. Hand, assistant to the vice-president of the Eastern region of the Canadian Pacific at Toronto, Ont., has been appointed general manager of the Quebec Central (C.P.R. subsidiary) at Sherbrooke, Que. Mr. Hand succeeds **J. N. Fraine**, whose appointment as assistant to the vice-president of the system at Montreal, Que., was announced in the *Railway Age* of March 4. **Duncan**

M. George, chief clerk to the chairman and president at Montreal, succeeds Mr. Hand at Toronto.

Mr. Hand was born at Longueuil, Que., on February 5, 1906, and attended Western University, London,



Arthur M. Hand

Ont. He entered railroad service as junior clerk in the legal department of the C.P. at Montreal, subsequently transferring to the freight and operating departments at Toronto. After holding various other positions on the C.P., including traffic supervisor and assistant superintendent in the operating department at Montreal and Toronto, Mr. Hand was appointed superintendent of the To-



Duncan M. George

ronto Terminals at Toronto in July, 1944. He held the latter position until August, 1947, when he was appointed assistant to vice-president, operating department, of the Eastern region of the C.P. at Toronto.

Mr. George served as chief clerk to the general superintendent of the Ontario district of the C.P. at Toronto from 1942 until March, 1947. On the latter date he was appointed chief clerk to the chairman and president at Montreal.

Theodore M. Caiazza, freight traffic manager of the Atchison, Topeka & San-

ta Fe at Chicago, has been appointed to the newly-created position of assistant to the vice-president—traffic at that point. Mr. Caiazza was born at Fresno, Cal., on March 6, 1905, and attended high school in his native city. He also attended the University of California for one year before entering service with the Santa Fe as a stenographer in the operating department at San Francisco, Cal., in 1926. Six months later he was transferred to the traffic department in the same capacity. He held positions as



Theodore M. Caiazza

division clerk and rate clerk and served as chief clerk in the foreign department from 1935 to 1937. Subsequently he served as head rate clerk and chief rate clerk until his appointment as assistant general freight agent at San Francisco in January, 1945. In March, 1947, Mr. Caiazza became freight traffic manager at Chicago.

FINANCIAL, LEGAL & ACCOUNTING

C. G. Siegman, general tax attorney of the Chesapeake & Ohio at Huntington, W. Va., has been appointed general attorney at Cleveland, Ohio.

D. K. Van Ingen has been appointed assistant auditor, capital expenditures, of the Chicago & North Western, with headquarters at Chicago. **Harlow J. Dunham** has been elected assistant secretary, succeeding **R. C. Beguelin**, resigned.

A. F. Hucksold, assistant auditor of the Association of Western Railways at Chicago, has been promoted to auditor at that point, succeeding the late **G. A. Ehmer**, whose death was reported in the *Railway Age* of February 25. **W. R. Nugent** succeeds Mr. Hucksold.

OPERATING

R. A. Bothmer has been appointed trainmaster of the Chicago & North Western at Spooner, Wis., succeeding **T. A. Van Landschoot**, assigned other duties.

P. J. Scheid, assistant to assistant vice-president of the Pullman Company at

Racor Switch Point Locks

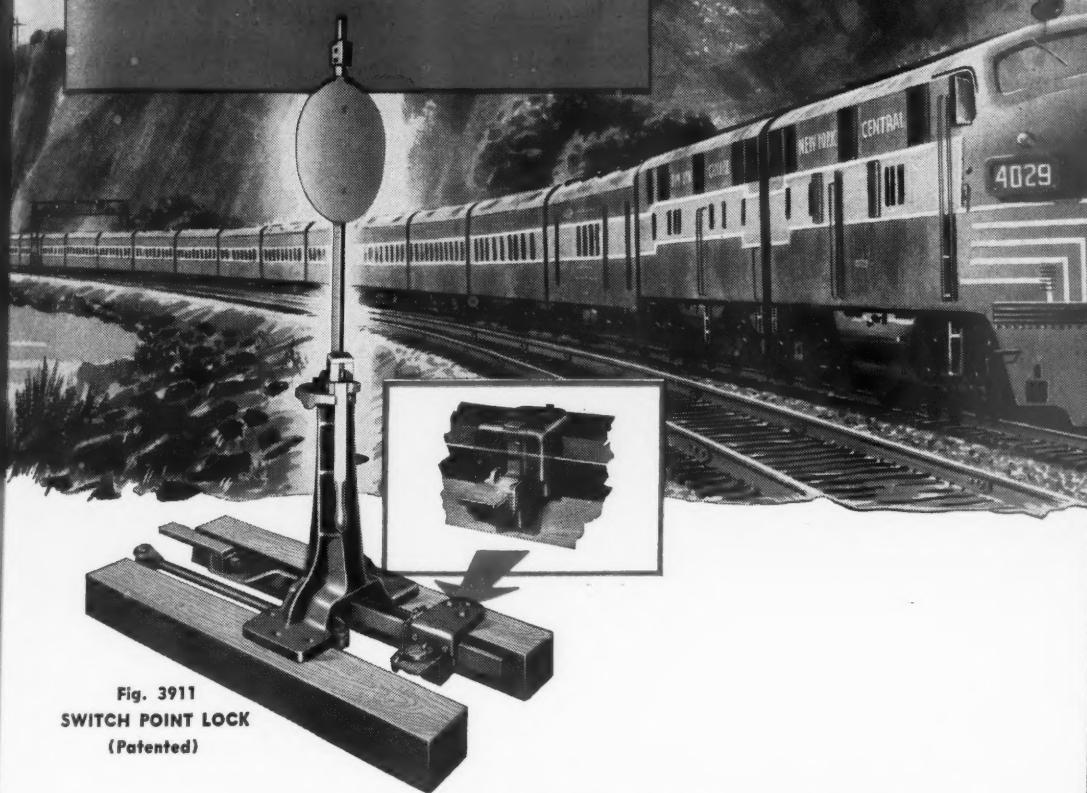


Fig. 3911
SWITCH POINT LOCK
(Patented)

Provide added protection for
New York Central's passenger train operation.

Essential to the safe operation of these trains, facing point switches must be secured in a closed position, regardless of failure or damage to the throwing mechanism. Racor Switch Point Locks can be installed with all designs of main line switch stands. Ruggedly designed — easily installed below top of ties as protection against damage, they function independently of stand.

Fig. 3911 (illustrated) for use with all types of column throw stands.

Fig. 3912 available for use with all types of ground throw stands.

America's
most complete line
of track specialties

AUTOMATIC
SWITCH STANDS

VERTICAL
SWITCH RODS

SAMSON
SWITCH POINTS

SWITCH POINT
LOCKS

RAIL LUBRICATORS

DEPTH HARDENED
CROSSINGS

REVERSIBLE MANGANESE
STEEL CROSSINGS

MANGANESE STEEL
GUARD RAILS



RAMAPO AJAX DIVISION

109 North Wabash Avenue, Chicago 2, Ill.



Chicago, has been appointed superintendent of the Chicago operating zone, succeeding **R. J. Ruddy**, who has retired.

R. J. Stone, general manager of the St. Louis-San Francisco, has been appointed also to a similar post with the Alabama, Tennessee & Northern (subsidiary of the Frisco), with headquarters as before at Springfield, Mo. **H. W. Hale**, assistant general manager of the Frisco's Eastern district, with headquarters at Springfield, has been appointed also assistant general manager of the A.T.&N.

V. A. Gordon, assistant superintendent, Joplin-White River divisions of the Missouri Pacific at Nevada, Mo., has been promoted to superintendent of the M. P.'s Missouri and Memphis divisions and of the Missouri-Illinois (part of the M. P. Lines), west of the Mississippi river, including River Transfer, with headquarters at Poplar Bluff, Mo. He succeeds **H. A. Israel**, transferred to the Wichita, Joplin and White River divisions at Wichita, Kan., to succeed **R. C. Wildeboor**, assigned to other duties. **T. E. Fox**, assistant to general superintendent of transportation at St. Louis, Mo., replaces Mr. Gordon and is succeeded in turn by **C. C. Courtway**, trainmaster, Memphis division, at Wynne, Ark. Succeeding Mr. Courtway is **D. E. Walker**, trainmaster, Northern Kansas division, at Concordia, Kan., who is succeeded in turn by **C. R. Dodson**.

Reginald Hayes, general superintendent of the Montreal district of the Canadian National at Montreal, Que., has been appointed general manager of the Central region at Toronto, Ont., succeeding **W. H. Kyle**, whose promotion to assistant vice-president of operation for the system at Montreal was reported in the *Railway Age* of March 4. **E. H.**



Reginald Hayes

Locke, superintendent of the Montreal terminals and St. Jerome divisions at Montreal, has been appointed general superintendent transportation of the Central region at Toronto, succeeding **J. A. O. Boivin**, who succeeds Mr. Hayes at Montreal. **W. H. Murray**, assistant superintendent of the Montreal terminals

at Montreal, has been appointed superintendent, succeeding Mr. Locke. **J. D. Hayes**, assistant superintendent of the Belleville division at Lindsay, Ont., has been transferred to the Montreal terminals, succeeding Mr. Murray.

Reginald Hayes, born at Halifax, N. S., entered the service of the C. N. on August 1, 1915, serving in various capacities at Moncton, N. B., until December, 1918. He then went to Montreal as secretary and the following year was promoted to chief clerk to the general manager. In March, 1923, Mr. Hayes was appointed assistant chief clerk to general manager at Toronto, being advanced to chief clerk in July, 1927. He became superintendent of the Horne Payne division in June, 1938, subsequently transferring to the St. Thomas division and to the Ottawa division in July, 1944.



E. H. Locke

Mr. Hayes transferred to the Montreal terminals and St. Jerome divisions at Montreal in March, 1946, and was promoted to general superintendent of the Northern Ontario district at North Bay, Ont., in May, 1948. He went to the Montreal district at Montreal in February, 1949.

Mr. Locke began his railroad career in 1914 as a messenger with the Grand Trunk (now part of the C.N.) at Montreal, Que. He held various positions until 1929, when he was appointed traveling inspector. He was promoted to district supervisor of car services in 1939, and became trainmaster at Montreal in 1941, later advancing to assistant superintendent at Montreal and London, Ont., successively. In 1947 Mr. Locke became superintendent of terminals at Fort Huron, Ont., and the following year was appointed division superintendent at Belleville, Ont., transferring to the Montreal terminals and St. Jerome divisions at Montreal in October, 1949.

TRAFFIC

W. C. Lewis, general agent of the Norfolk Southern at Greensboro, N. C., has been promoted to division freight agent at Raleigh, N. C., succeeding **J. M. Dillard**, whose promotion to general Southern freight agent at Atlanta, Ga., was

reported in the *Railway Age* of January 28.

Charles J. Lindorfer, chief clerk in the general passenger department of the Northern Pacific, has been advanced to assistant general passenger agent at St. Paul, Minn., succeeding **V. F. Harvey**, furloughed because of ill health.

Frank B. Littlefair has been appointed district freight agent of the New York, Ontario & Western at Utica, N. Y., succeeding **W. A. Carr**, who resigned on March 1.

MECHANICAL

J. I. Stewart, supervisor shop machinery and tools of the New York Central system at Buffalo, N. Y., has retired after more than 43 years of service. **W. E. Buck** has been appointed general supervisor machinery and production at New York, with supervision over the shop machinery and tool committee at Buffalo and supervisors of production at steam locomotive shops.

B. W. Swain, general foreman of the St. Louis-San Francisco at Sherman, Tex., has been promoted to master mechanic at that point.

C. A. Stark has been appointed general car foreman of the Chicago & North Western at Milwaukee, Wis., succeeding **W. Harnett**, retired.

ENGINEERING & SIGNALING

G. B. Blatt has been appointed superintendent of telegraph and signals of the Reading at Philadelphia, Pa., succeeding **W. L. Scott**, who, at his own request, has been assigned to other duties.

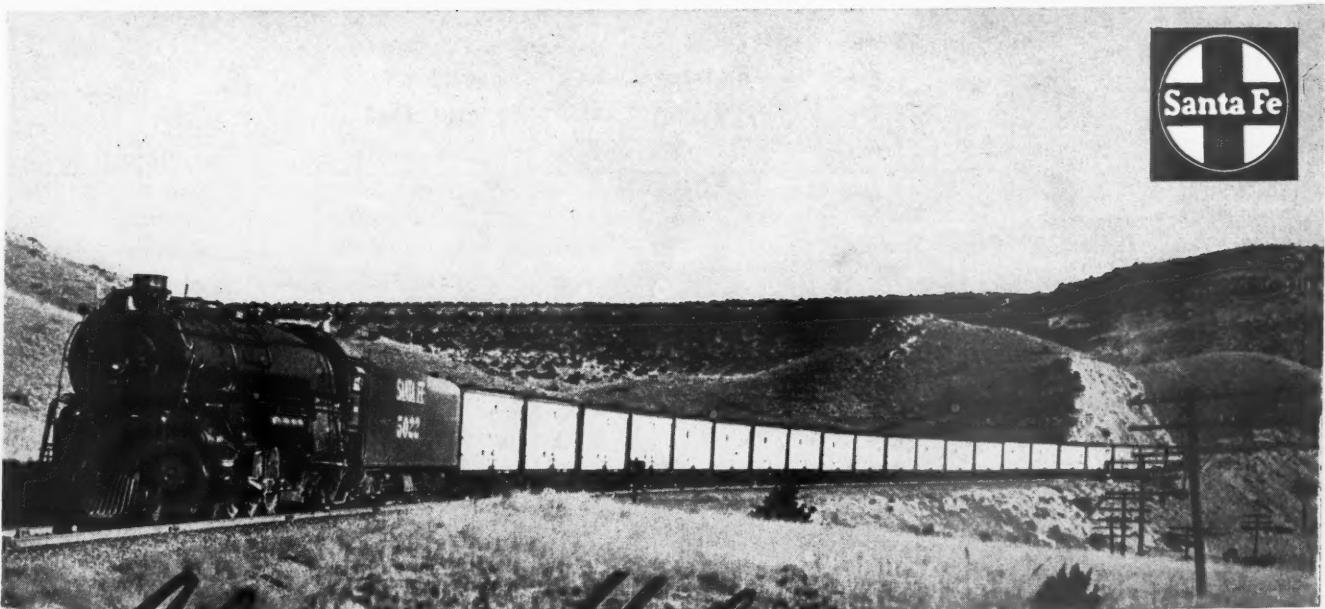
SPECIAL

R. E. Mello has been appointed assistant manager of personnel of the Southern Pacific, with headquarters at San Francisco, Cal.

E. A. Spearing has been appointed superintendent of investigation in charge of the special service branch of the Canadian National at Montreal, Que., with system jurisdiction.

OBITUARY

Leon A. Jenkins, superintendent of car service of the Delaware, Lackawanna Western at Scranton, Pa., died on March 1 at his home in that city. Mr. Jenkins was born at Scranton on December 29, 1888, and entered railroad service on June 14, 1907, serving in the car service department of the Lackawanna until January 1, 1930. After working in the operating department for the next 10 years, Mr. Jenkins was appointed superintendent of car service on January 1, 1940.



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OPERATING REVENUES AND OPERATING EXPENSES OF CLASS I STEAM RAILWAYS

Compiled from 128 monthly reports of revenues and expenses representing 132 Class I steam railways.

(Switching and Terminal Companies Not Included)

FOR THE MONTH OF DECEMBER 1949 AND 1948

Item	United States		Eastern District		Southern District		Western District	
	1949	1948	1949	1948	1949	1948	1949	1948
Miles of road operated at close of month.....	226,545	226,683	53,393	53,506	45,998	46,032	127,154	127,145
Revenues:								
Freight.....	\$575,664,005	\$648,067,161	\$215,122,222	\$245,989,071	\$119,749,290	\$133,000,786	\$240,792,493	\$269,077,404
Passenger.....	74,378,975	90,671,455	40,410,679	47,880,980	11,311,622	14,541,757	22,656,674	28,248,718
Mail.....	23,348,327	23,183,073	8,176,890	7,573,194	4,102,328	4,619,142	11,069,109	10,990,737
Express.....	9,061,977	9,847,036	2,479,533	2,616,750	1,860,839	1,906,029	4,721,605	5,324,257
All other operating revenues.....	28,376,601	34,827,947	12,615,175	16,712,408	5,192,297	5,479,916	10,569,129	12,635,623
Railway operating revenues.....	710,829,885	806,596,672	278,804,499	320,772,403	142,216,376	159,547,630	289,809,010	326,276,639
Expenses:								
Maintenance of way and structures.....	93,070,995	107,574,540	30,765,412	38,849,594	19,010,205	20,187,621	43,295,378	48,537,325
Depreciation.....	11,075,233	10,719,970	4,766,876	4,602,451	2,003,640	1,946,924	4,304,717	4,170,595
Retirements.....	5,199,787	5,161,937	2,270,732	2,480,863	1,147,508	1,101,678	1,781,547	1,579,396
Deferred maintenance.....	240,892	*146,248	400,000	207,482	*97,542	*122,681	*61,566	*231,049
Amortization of defense projects.....	164,700	*67,395	31,525	19,048	46,362	49,799	86,813	*136,242
Equalization.....	*21,013	849,674	460,828	2,464,121	*777,046	*1,567,086	295,205	*47,361
All other.....	76,411,396	91,056,602	22,835,451	29,075,629	16,687,283	18,778,987	36,888,662	43,201,986
Maintenance of equipment.....	137,567,199	152,152,822	57,429,030	65,686,236	24,283,913	29,943,912	55,854,256	56,522,674
Depreciation.....	23,611,282	22,128,905	8,419,186	8,680,331	5,345,692	4,891,876	9,846,404	8,556,698
Retirements.....	*6,814	*113,724	*31,842	*17,423	*30,332	*22,489	55,360	*73,812
Deferred maintenance and major repairs.....	8,055,950	519,381	8,320,703	826,388	*7,228	*50,240	*257,525	*256,767
Amortization of defense projects.....	1,300,819	1,226,017	528,966	452,113	238,572	238,911	533,281	534,993
Equalization.....	*2,126,919	*962,907	*1,564,692	*288,227	*584,166	*694,420	21,939	19,740
All other.....	106,732,881	129,355,150	41,756,709	56,033,054	19,321,375	25,580,274	45,654,797	47,741,822
Traffic.....	16,125,311	17,683,407	5,522,080	6,443,813	3,354,797	3,786,114	7,248,434	7,453,480
Transportation—Rail line.....	288,992,229	334,728,285	122,467,645	142,471,530	52,382,701	61,287,336	114,141,883	130,969,419
Miscellaneous operations.....	9,628,931	11,262,342	3,670,378	4,378,238	1,423,502	1,696,294	4,535,051	5,187,810
General.....	22,907,056	25,611,589	8,468,594	10,461,550	4,861,761	5,508,127	9,576,701	9,641,912
Railway operating expenses.....	568,291,721	649,012,985	228,323,139	268,290,961	105,316,879	122,409,404	234,651,703	258,312,620
Net revenue from railway operations.....	142,538,164	157,583,687	50,481,360	52,481,442	36,899,497	37,138,226	55,157,307	67,964,019
Railway tax accruals.....	57,508,091	81,535,825	20,305,576	26,233,872	19,885,425	20,557,400	17,317,090	34,744,553
Pay-roll taxes.....	20,769,757	21,579,347	8,091,011	9,038,780	3,957,084	4,147,240	8,721,662	8,393,327
Federal income taxes†.....	12,592,288	33,579,864	4,085,584	6,949,034	10,316,792	11,068,248	*1,810,088	15,562,582
All other taxes.....	24,146,046	26,376,614	8,128,981	10,246,058	5,611,549	5,341,912	10,405,516	10,788,644
Railway operating income.....	85,030,073	76,047,862	30,175,784	26,247,570	17,014,072	16,580,826	37,840,217	33,219,466
Equipment rents—Dr. balance.....	12,933,744	8,996,918	7,569,647	4,154,321	*735,453	*1,483,594	6,099,550	6,326,191
Joint facility rents—Dr. balance.....	2,786,943	2,548,999	1,379,490	1,094,874	433,343	389,167	974,110	1,064,958
Net railway operating income.....	69,309,386	64,501,945	21,226,647	20,998,375	17,316,182	17,675,253	30,766,557	25,828,317
Ratio of expense to revenues (per cent)	79.9	80.5	81.9	83.6	74.1	76.7	81.0	79.2

FOR THE 12 MONTHS ENDED WITH DECEMBER 1949 AND 1948

Item	United States		Eastern District		Southern District		Western District	
	1949	1948	1949	1948	1949	1948	1949	1948
Miles of road operated at close of month.....	225,437	226,990	53,430	53,594	46,025	46,123	125,982	127,273
Revenues:								
Freight.....	\$7,048,403,845	\$7,976,426,333	\$2,601,052,233	\$3,035,316,702	\$1,412,781,806	\$1,627,800,273	\$3,034,569,806	\$3,313,309,358
Passenger.....	860,743,643	964,303,426	453,450,979	494,883,784	132,187,679	150,107,288	275,104,985	319,312,354
Mail.....	222,774,291	199,942,082	81,280,840	71,103,204	40,146,432	36,211,356	101,347,019	92,627,522
Express.....	79,531,076	117,643,590	21,412,914	38,276,714	14,134,902	20,026,794	43,983,260	59,340,082
All other operating revenues.....	368,868,803	413,539,750	163,175,796	184,082,718	60,391,997	67,864,681	145,301,010	161,592,351
Railway operating revenues.....	8,580,321,658	9,671,855,181	3,320,372,762	3,823,663,122	1,659,642,816	1,902,010,392	3,600,306,080	3,946,181,667
Expenses:								
Maintenance of way and structures.....	1,283,511,188	1,347,965,870	447,777,777	500,246,428	263,664,288	278,749,020	572,069,123	568,970,422
Depreciation.....	127,800,240	124,797,309	53,804,036	52,963,654	22,332,446	21,834,312	51,663,758	49,999,343
Retirements.....	17,977,129	17,867,984	5,212,424	5,729,357	3,111,275	2,812,431	9,653,430	9,326,196
Deferred maintenance.....	*3,246,039	*3,502,086	367,774	205,515	*1,749,272	*1,131,997	*1,864,541	*2,575,604
Amortization of defense projects.....	1,814,905	1,839,307	201,753	175,615	560,006	542,968	1,053,146	1,120,724
Equalization.....	37,999	6,864		*3			37,999	6,867
All other.....	1,139,126,954	1,206,956,492	388,191,790	441,172,290	239,409,833	254,691,306	511,525,331	551,092,896
Maintenance of equipment.....	1,607,294,611	1,702,923,059	654,557,086	722,624,394	315,984,079	342,834,068	636,753,446	637,464,597
Depreciation.....	280,015,161	250,826,018	107,509,922	98,894,347	62,644,440	55,584,743	109,860,799	96,346,928
Retirements.....	*663,299	*1,051,395	*173,713	*144,854	*218,005	*289,375	*271,581	*617,166
Deferred maintenance and major repairs.....	7,009,005	*2,826,904	7,971,125	917,388	*233,674	*1,323,225	*728,446	*2,421,067
Amortization of defense projects.....	14,699,189	14,729,593	5,452,497	5,397,109	2,864,312	2,867,237	6,382,380	6,465,247
Equalization.....	1					1		
All other.....	1,306,234,554	1,441,245,747	533,797,255	617,560,404	250,927,005	285,994,688	521,510,294	537,690,655
Traffic.....	194,352,350	193,824,761	66,208,100	66,927,692	40,743,318	42,000,076	87,400,932	84,896,993
Transportation—Rail line.....	3,415,824,555	3,821,261,033	1,438,088,290	1,617,976,784	619,740,146	704,941,033	1,358,076,119	1,498,343,216
Miscellaneous operations.....	117,991,687	131,744,241	43,717,308	50,198,695	17,182,700	19,436,778	57,091,679	62,108,768
General.....	272,811,735	274,281,896	104,867,105	105,433,481	58,279,886	59,856,459	109,664,744	108,991,956
Railway operating expenses.....	6,891,786,126	7,472,000,860	2,755,135,666	3,063,407,474	1,315,594,417	1,447,817,434	2,821,056,043	2,960,775,952
Net revenue from railway operations.....	1,688,535,532	2,199,854,321	565,237,096	760,255,648	344,048,399	454,192,958	779,250,037	985,405,715
Railway tax accruals.....	832,693,632	1,028,469,501	276,783,780	348,500,165	185,718,712	231,351,166	370,191,140	448,618,170
Pay-roll taxes.....	253,152,671	264,937,044	102,756,703	110,085,496	48,191,489	51,812,209	102,204,479	103,039,339
Federal income taxes†.....	261,650,595	448,231,564	60,328,546	117,976,905	69,364,206	113,915,859	131,957,843	216,338,800
All other taxes.....	317,890,366	315,300,893	113,698,531	120,437,764	68,163,017	65,623,098	136,028,818	129,240,031
Railway operating income.....	855,841,900	1,171,384,820	288,453,316	411,755,483	158,329,687	222,841,792	409,058,897	536,787,545
Equipment rents—Dr. balance.....	131,067,197	131,287,713	58,075,384	59,228,193	*6,925,728	*16,711,215	79,917,541	88,770,735
Joint facility rent—Dr. balance.....	38,260,112	37,874,341	18,456,932	18,037,444	5,815,739	5,501,111	13,987,441	14,335,786
Net railway operating income.....	686,514,591	1,002,222,766	211,921,000	334,489,846	159,439,676	234,051,896	315,153,915	433,681,024
Ratio of expenses to revenues (percent)	80.3	77.3	83.0	80.1	79.3</			

GENERAL NEWS

Closes Transport Hearings

(Continued from page 101)

capital. The I.W.C. board chairman estimated barge line "merchandise traffic" for 1950 would be close to 800,000 tons, and indicated the new equipment, if obtained and placed in operation would "cut in half" the ton-mile cost of boat operations. As alternatives to the rehabilitation program, Mr. Trimble said the I.W.C. would either have to be liquidated, or sold or leased to private interests. He said the Department of Commerce which holds the I.W.C. stock "does not consider necessary" the liquidation idea, and that statutory restrictions make sale of the property difficult.

N.I.T. League's Views

During the March 3 session, which was devoted in part to shipper groups, the subcommittee again heard recommendations that the Inland Waterways Corporation "is not economical and should be abandoned." This comment was made by Edward F. Lacey, executive secretary of the National Industrial Traffic League, who outlined to the subcommittee a number of the league's legislative recommendations. These included opposition to the St. Lawrence seaway, and to the establishment of a federal department of transportation designed to replace the present commission form of regulatory authority. Mr. Lacey also asked repeal of the excise taxes on transportation, and urged that no change be made in the Reed-Bulwinkle Act. The N.I.T.L. secretary expressed concern at what he called the "constant reaching out for added authority" by regulatory agencies, but added that an even greater "menace" was the "increasing tendency of the government to promote some forms of transport over others."

Giles Morrow, executive secretary and general counsel of the Freight Forwarders Institute, filed a statement on behalf of that organization. He recommended that the Freight Forwarders Act (Part IV of the Interstate Commerce Act) be amended to give carrier status to the forwarders and also to make present "exemptions" less liberal. He discussed at length the exemption question, saying "the need for some change has been clearly demonstrated." He said there are at present approximately 90 freight forwarders in operation, but there are "almost as many known operators claiming to be exempt from regulation . . . as there are regulated freight forwarders complying in all respects with the act."

"Loopholes" in Regulatory Laws

With respect to "loopholes" in the various regulatory laws, there was further testimony by Edgar S. Idol, general counsel of the American Trucking Associations. Mr. Idol, representing the trucking industry, said "there are so many holes in the enabling legislation



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(of the National Transportation Policy)" that the administrative agencies cannot carry out the intent of Congress. He said the "holes in the law" are exemptions that allow many for-hire carriers to operate without regulation. In pointing out these exemptions, Mr. Idol listed carriers of "seafoods and agricultural commodities" as the most important, but also placed high on the list traffic handled for account of freight forwarders and the United States government. He said the exemptions allowed practices that "tear down, rather than promote" sound economic conditions in transportation.

Among others who appeared to testify or who filed statements with the Beckworth subcommittee were George H. Shafer, traffic manager of the Weyerhaeuser Sales Company, St. Paul, Minn., who appeared on behalf of the U.S. Chamber of Commerce; F. F. Estes, traffic manager of the National Coal Association; Henry H. Buckman, consulting engineer for the National Rivers and Harbors Congress; and Frazer Bailey, president of the National Federation of American Shipping. Mr. Buckman recommended that Congress enact legislation directing the Secretary of War, through the chief of engineers, "to prepare and submit to Congress a plan for the development of an inter-connected system or systems of inland waterways within the United States of such geographic extent and economic significance as to be truly national in character, and limited only by absolutely insurmountable physical or economic barriers." Mr. Bailey, for the shipping federation, advocated lower toll charges on merchant ships using the Panama Canal.

U.S.C. of C. Presentation

Mr. Shafer outlined to the subcommittee the Chamber of Commerce views on pending legislation. The Chamber, Mr. Shafer said, "strongly supports" the existing Reed-Bulwinkle Act, opposes the continued imposition of the wartime transportation taxes, and "has long advocated" liquidation or sale of the Federal Barge Lines. He went on to express C. of C. support for a single federal agency to regulate competing forms of transportation, and urged that such an agency, if established, be made independent of the Executive branch. Mr. Shafer said also that legislation "interfering with the proper functions of management," such as train limit and full crew laws, "are not warranted by any economic or safety consideration." With respect to highways, it was recommended that the government limit its responsibilities to "coordination" in interstate commerce and that local and state governments be required to carry "their proper share" of the cost of highway improvements. Mr. Shafer said the chamber is opposed to pending legislation that would require the federal government to put up 75 per cent of the funds for improvements on the interstate highway system.

Mr. Estes said the coal industry has

a "vital interest" in the welfare of the railroads because coal furnishes more revenue to the railroads than any other individual commodity or class of freight, and because the preponderance of bituminous coal is moved by rail. He discussed federal regulation of transportation, and said the association favors establishment of a single regulatory agency for all transportation, with that single agency responsible direct to Congress. Mr. Estes recommended a more liberal policy to permit abandonment of unprofitable rail lines, and concluded his statement by declaring that a "labor monopoly exists today in the transportation industry." He added that "unrestrained and unregulated monopoly is denied business by our anti-trust laws, and rightly so, and should likewise be denied labor unions . . . they should be required to assume responsibility under the law the same as any other group of citizens."

Start Action for Appeal Of Rail-Barge Case

The railroads, on March 7, filed with the federal district court at Chicago a petition for appeal to the Supreme Court of the so-called rail-barge differential case. The appeal will be from the district court's decision of January 12 wherein was upheld the Interstate Commerce Commission order requiring railroads and water carriers on the inland waterways to establish through routes with joint rail-water rates reflecting differentials under all-rail rates.

The carriers, in their assignment of errors, cited 24 points they will rely on in their appeal to the Supreme Court. They charged, among other things, that the lower court should have set aside the I. C. C. order on the ground that: (1) "The establishment of differentials in favor of the inferior barge-rail service, without a finding that the service cost less to perform than all-rail service, deprives plaintiffs of their inherent advantages of lower cost of service and superiority of service, in violation of the National Transportation Policy"; and (2) "The commission is without power to establish joint barge-rail rates in the absence of a finding that such rates are just and reasonable and in the absence of preliminary and subsidiary findings on which such an ultimate finding could rationally be based."

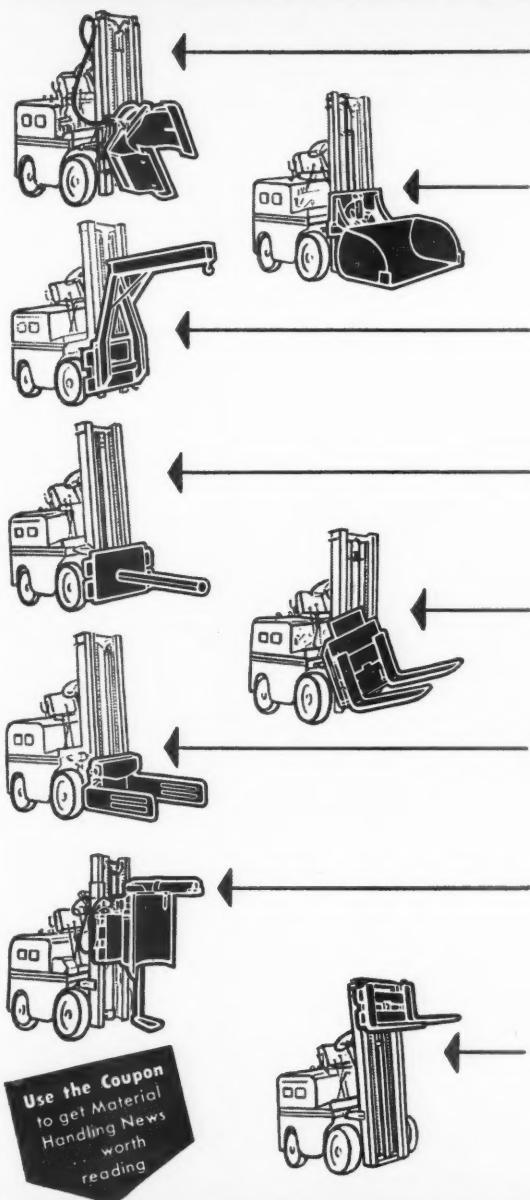
New I.C.C. Bureau Chief With Commission Since 1920

Frank E. Mullen, whose appointment as chief examiner, Bureau of Formal Cases, of the Interstate Commerce Commission, was noted in *Railway Age* of February 25, was born in New York City on January 23, 1888. He received his B.S. degree from the College of the City of New York and was subsequently graduated from the New York Law School with an LL.B. During World War I he served in France as a captain with a field signal battalion.

Mr. Mullen joined the Bureau of Formal Cases, which he now heads, on July 1, 1920, and served as an examiner

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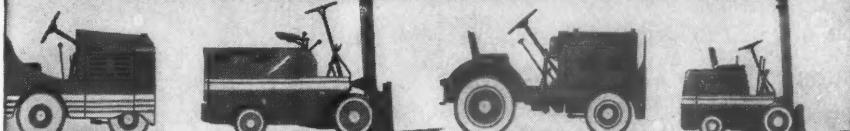
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until 1941. On April 16 of that year he was appointed assistant chief examiner of the bureau, remaining in that position until June 11, 1947, when he became a hearing examiner under the provisions of the Administrative Procedure Act. His new appointment was made effective February 20.

New Haven Tries Out Lower Week-End Night Coach Fares

Reduction in the price of round-trip night coach fares between Boston, Mass., Providence, R. I., and New York on week-ends has been announced by the New York, New Haven & Hartford. The

new low price makes tickets, good going either Friday or Saturday nights and returning Sunday nights, available at \$5.75 round trip, or less than the regular one-way fare.

"The reductions to the lowest price in years for round-trip travel between Boston and New York are intended to stimulate week-end round-trip nighttime travel by train," the railroad's announcement said.

Start Research Program to Extend RR Electrification

Four major industrial groups have started a jointly financed co-operative

research and development program aimed at greater application of railroad electrification. The groups include railroads, electric equipment manufacturers, coal interests and the electric light and power industry. The administrative sponsor of the program is the Edison Electric Institute, and supervision will be conducted by the recently appointed Joint Committee on Railroad Electrification.

The first phase of the program is a technical and economic investigation to be made by the Battelle Memorial Institute, Columbus, Ohio. Areas of research are problems of power supply, including overhead lines and substations, locomotives, signal system and electric control. During the year, Battelle will attempt to develop ideas and recommendations to make the extension of railroad electrification still more economically feasible and competitively attractive. The results of this technical and economic study will then determine the practicability of a full scale research and development program to provide improved methods, facilities and equipment necessary for much greater railroad electrification.

The committee, representing the sponsor and supervisors, which will work directly with Battelle Institute, consists of F. McQuillin, West Penn Power Company, Pittsburgh, Pa., chairman; J. C. Fox, Virginian, Norfolk, Va.; J. Stair, Jr., Pennsylvania, Philadelphia, Pa.; T. F. Perkins, General Electric Company, Schenectady, N. Y.; Charles Kerr, Jr., Westinghouse Electric Corporation, East Pittsburgh; L. W. Birch, Ohio Brass Company, Mansfield, Ohio, and E. C. Payne, Pittsburgh Consolidation Coal Company, Pittsburgh.

Approves Bulwinkle-Act Pact On Hire, Demurrage, Storage

Division 2 of the Interstate Commerce Commission has conditionally approved the Bulwinkle-Act agreement filed by railroad parties to the car-hire, demurrage and storage rules which are administered through the Association of American Railroads. The proceeding is Section 5a application No. 7, and the division's report, dated February 28, was made public March 9, as this issue went to press.

The conditions imposed by the division will not change the agreement in a substantive way. They will merely require a rewriting of some provisions, as proposed by the A. A. R. in the light of suggestions made by the National Industrial Traffic League.

Canadian Rate Increases Effective on 15 Days' Notice

Rate increases authorized for Canadian railroads under Order No. 74034 of the Board of Transport Commissioners, dated March 1, may be made effective on not less than 15 days' notice.

As reported in last week's *Railway Age*, page 65, the approved increases amount to 7.4 per cent over present rates, or 16 per cent over rates in effect prior



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In locomotive cabs, in cabooses . . . wherever train crews are stationed . . . the neat steel AERO® or AJAX® Dispenser with its clean, white paper cups comply with all regulations.

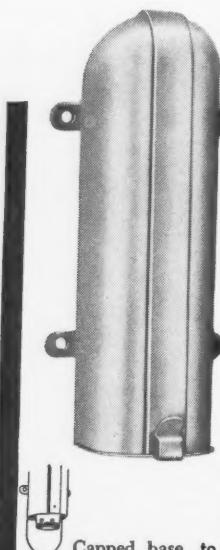
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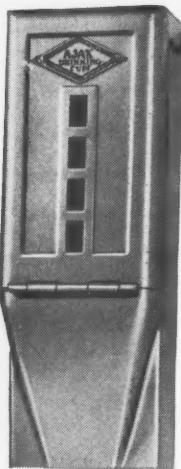
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to September, 1949; on coal and coke 7 cents per ton over present rates, and 15 cents per ton over early-1949 rates. Rates on grain and grain products moving in western Canada; rates on certain export, import and international traffic; agreed charges; and demurrage and penalty charges are not included in the authorization for increases, but other accessorial service charges can be raised.

The order further provides that the minimum charge for a single l.c.l. shipment between any two stations shall be 100 lb., at first-class rate, but not less than 75 cents.

"Cavalcade of America" to Feature Railroad Story

The story of Theodore D. Judah, one of the men who was primarily responsible for construction of the first transcontinental railroad, will be featured on the Du Pont radio program "Cavalcade of America" over National Broadcasting Company stations at 8 p. m., Eastern standard time, on March 14. Douglas Fairbanks, Jr., will play the part of Mr. Judah.

Johnson Heads Washington Sesqui's Transport Group

Chairman J. Monroe Johnson of the Interstate Commerce Commission has been appointed chairman of the national transportation committee of the Sesquicentennial Commission which is arranging for the celebration of the 150th anniversary of the establishment of the capital at Washington, D. C. Other members of the committee include William T. Faricy, president of the Association of American Railroads; Emory S. Land, president of the Air Transport Association; and Arthur M. Hill, director of the Greyhound Corporation.

Transport Expert Dies

Emory R. Johnson, dean of the University of Pennsylvania's Wharton School of Finance and Commerce from 1919 to 1933 and for many years professor of transportation and commerce at the university, died in Philadelphia, Pa., on March 7. Mr. Johnson was born in Waupun, Wis., on March 22, 1864, and on numerous occasions had advised the federal government on transportation problems.

Vacates Minimum-Rate Order For Intercoastal Water Lines

Acting favorably upon petitions filed by interested water carriers, Division 3 of the Interstate Commerce Commission has vacated a 10-year-old, minimum-rate order covering charges on westbound intercoastal traffic. The order was issued April 8, 1940, by the United States Maritime Commission, which then had regulatory jurisdiction over the intercoastal lines.

The proceeding, formerly Maritime Commission Docket No. 514, became I.C.C. Docket No. 28622 when the latter commission took over the regulation pursuant to the Transportation Act of

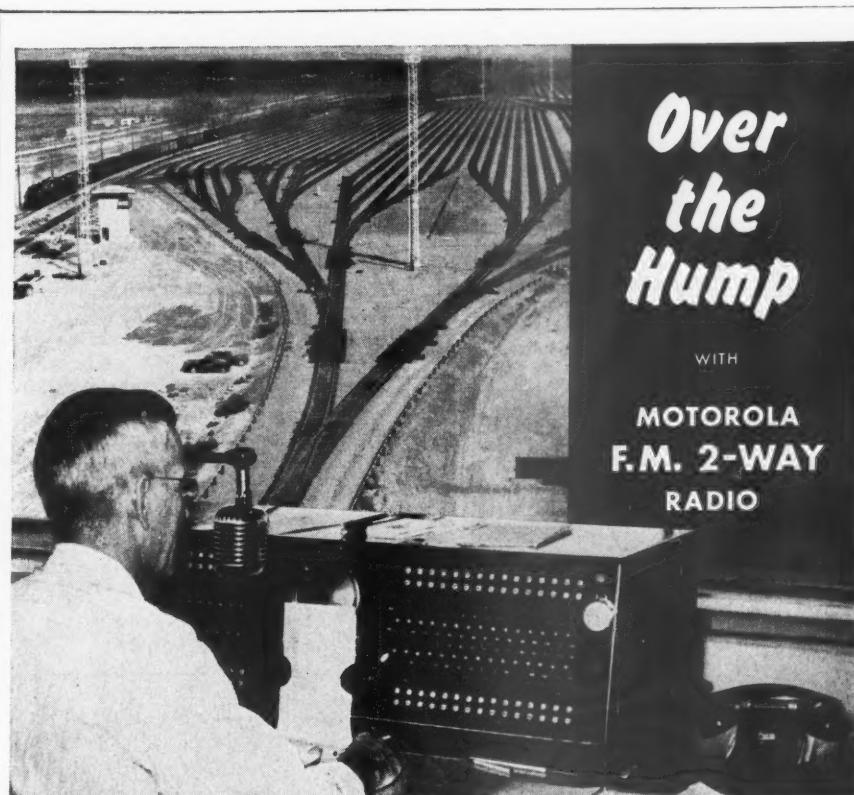
1940. The vacating order, dated February 27, was accompanied by a supplemental I.C.C. report in the case.

The report recalled that the Maritime Commission had issued the order to halt "rate wars," in which "one of the major sources of contention" had been the maintenance by the Shepard Steamship Company of rates lower than those published by members of the Intercoastal Steamship Freight Association. As their presentations were summarized by the I.C.C., the petitioners advised that Shepard was no longer operating in the intercoastal trade, and contended that "all other grounds which led to issuance of the minimum-rate order have been removed."

Copies of the petitions were served upon parties of record in the proceeding before the Maritime Commission, and on the Transcontinental Freight Bureau and the American Trucking Associations, the commission said. It added that "no objection to the requested vacation of the order has been raised by any shipper or competing carrier."

Recommends Improvements For North Shore Line

A recommendation that the Shore Line route of the Chicago North Shore & Milwaukee be modernized and improved, rather than abandoned, was made to the Illinois Commerce Commission by John



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W. Roberts, consulting engineer, after an extensive study made for the commission of the road's suburban route. The management of the road is seeking to abandon the route and substitute bus service through the north shore suburbs between Waukegan, Ill., and Chicago, contending that the suburban type operation of the Shore Line results in an annual loss of \$600,000.

Mr. Roberts' recommendations include re-routing of all Shore Line trains to the road's main line in Waukegan, eliminating the parallel "East" line which involves a bus transfer to reach downtown Waukegan; and relocation of North Chicago Junction (where the main line, or Skokie Valley route joins the Shore Line) to a point nearer Lake Bluff, Ill., eliminating several miles of parallel double track separated only by the tracks of the Chicago & North Western. It was pointed out that a considerable portion of the Shore Line's expenses resulted from a jurisdictional labor dispute which makes necessary the manning of North Shore trains by crews of the Chicago Transit Authority within the Chicago city limits.

Mr. Roberts also suggested operation of frequent shuttle trains between Highwood and Evanston through the more heavily populated suburbs, stating that the Shore Line route "contributes more to the railroad system's welfare than would be saved by its abandonment," and that by service and operational improvements, additional traffic could be obtained and the line's financial position considerably improved.

ORGANIZATIONS

The Railway Business Woman's Association of Chicago will hold its semi-annual business meeting and dinner on March 21, at 6:30 p.m., at the South Side Swedish Club.

Clifford G. Massoth, editor of the Illinois Central Magazine, Chicago, has been elected president of the American Railway Magazine Editors' Association, succeeding Jack R. Maguire, whose resignation to accept a post outside the railroad industry was reported in the *Railway Age* of February 11. Other officers elected are: First vice-president, A. E. Greco, editor, Pullman News; second vice-president, Virginia Tanner, editor, Baltimore & Ohio Magazine; secretary, W. B. Grumley, editor, Nickel Plate Magazine; and treasurer, H. F. Tate, advertising representative, Missouri-Kansas-Texas Magazine.

The New England Shippers Advisory Board, celebrating its silver anniversary, will hold its next meeting on March 21-22, at the Hotel Statler, Boston, Mass. E. G. Plowman, vice-president—traffic, U. S. Steel Corporation, will introduce the guest speaker, Earl B. Smith, director of traffic, General Mills, Inc., Minne-

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apolis, Minn., who will present a paper entitled "In the Interest of Every American." The guest speaker at the March 22 luncheon will be Edwin C. Johnson, president, Boston Chamber of Commerce, whose subject will be "A Business Man's View of Shippers Advisory Boards."

The next meeting of the **Western Railway Club**, designated as "Executives Night," will be held on March 20, at the Hotel Sherman, Chicago. "Transportation by Taxation" will be the subject of an address by A. H. Phelps, vice-president of the Westinghouse Electric Company, who will be introduced by D. P. Loomis, chairman of the Association of Western Railways.

The **New England Railroad Club** will hold its annual meeting and election of officers on March 14, at 6:30 p.m., at the Hotel Vendome, Boston, Mass. C. H. Beard, general traffic manager, Union Carbide & Carbon Corp., will address the meeting on "Some Problems of Our Railroads' Customers."

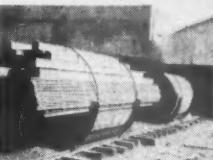
The **New York Chapter of the American Materials Handling Society** has been organized with the following temporary officers: Chairman, H. C. Bischoff, American Can Company; vice-chairman, A. A. Burkhardt, New York Central; treasurer, B. W. Hupp, Drake, Stratmen, Sheahan, Barclay, Inc.; and secretary, F. D. McCann, Hertner Electric Company. The

organization meeting, attended by 50 men interested in materials handling, was addressed by A. K. Strong of Syracuse, N. Y., national president, American Materials Handling Society. The new chapter is the 12th in the national organization, which now has over 1,000 members.

CAR SERVICE

I.C.C. Service Order No. 848, effective from March 3 until May 31 unless otherwise modified, authorizes railroads serving points in California and "other western territory" to furnish two to four S.F.R.D. or P.F.E. refrigerator cars in lieu of each box car ordered for the loading of cotton. The reefers supplied under the order must be "not suitable for transporting commodities requiring protective service." Not more than four such cars may be furnished in lieu of each box car ordered for loading shipments of uncompressed cotton in the territory involved, when such cotton is consigned or reconsigned to points for compression. And not more than two may be furnished for shipments of compressed cotton from points of compression in California and "other western territory" to points on the Southern Pacific, the Texas & New Orleans, the Union Pacific, and the Atchison, Topeka & Santa Fe.

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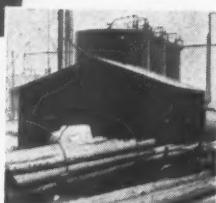
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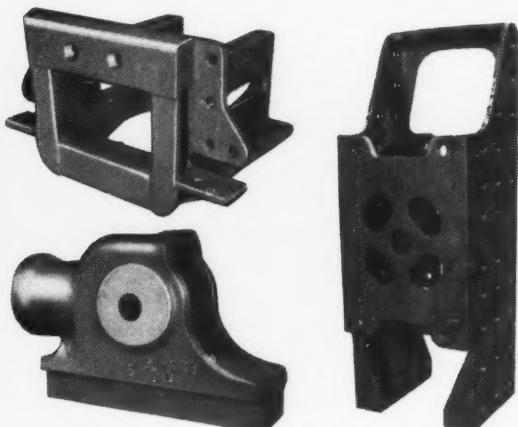


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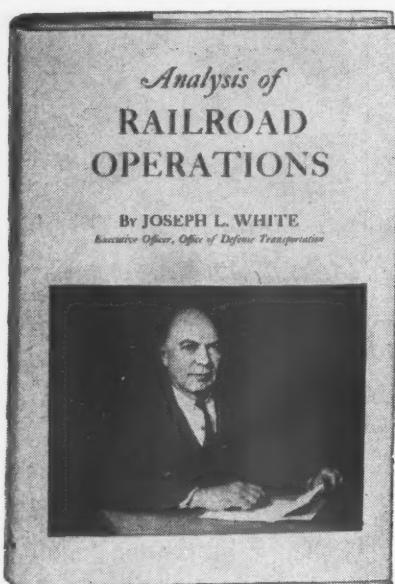


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For the inexperienced this book tells where to begin, where to find the information wanted and how to compile it. The experienced analyst will find in it many helpful hints and short cuts. Railroad executives and operating officers as well as department heads who may be called on to explain accounting figures reflecting on departmental activities, will find in it information they need. Railroad economists and statisticians can make use of the methods outlined.

Contents

Introduction—General Principles of Railroad Accounting—The Income Statement—Railway Operating Statistics—Railway Operating Revenues—Statistics of Freight and Passenger Service—Causes of Fluctuations in Operating Revenues—Railway Operating Expenses—Relation of Expenses to Revenues—Maintenance of Way and Structures—Unit Cost of Maintaining Road Property—Maintenance of Equipment—Account 314, Freight Train Cars—Repairs—Unit Costs of Maintaining Equipment—Budgetary Control of Maintenance Expenses—Transportation and Miscellaneous Operations—Unit Costs of Operation—Statistics of Utilization of Equipment—Control of Transportation Expenses Through Current Reports—Traffic and General Expenses, Taxes and Rents—Analysis of Actual Operations of Two Class I Railways in 1941—Appendix A: The Accomplishments of the United States Railroad Administration in Unifying and Standardizing the Statistics of Operation, by William J. Cunningham, Assistant Director of Operation, United States Railroad Administration (1919). Appendix B: Pictorial Summary of the Principal Sources of Railway Revenues and the Causes of Expenses as Recorded in the Accounts.